KVP4004A

BLACK BOX NETWORK SERVICES

ServSwitch™ 4site Flex

Simultaneously display four different analog/ digital video sources on one screen, while supporting either USB or PS/2 keyboards and mice.

Supports full-screen mode, quad-screen mode, PiP, and windows mode.

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

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or our products, contact Black Box Tech Support at **724-746-5500**
or go to **blackbox.com** and click on "Talk to Black Box."
You'll be live with one of our technical experts in less than 30 seconds.

Federal Communications Commission and Industry Canada Radio Frequency Interference Statements

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Instrucciones de Seguridad
(Normas Oficiales Mexicanas Electrical Safety Statement)

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
    - A: El cable de poder o el contacto ha sido dañado; u
    - B: Objectos han caído o líquido ha sido derramado dentro del aparato; o
    - C: El aparato ha sido expuesto a la lluvia; o
    - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
    - E: El aparato ha sido tirado o su cubierta ha sido dañada.

Safety Guidelines

WARNING: To avoid risk of electric shock, do not open the device or remove any part of the casing. If the device requires servicing, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

Read this manual carefully before operating the device. Observe all warnings and instructions on the device and in the operation manual. Keep this user manual for future reference.

Power supply: Only connect the device to a grounded power supply.

Installation: Make sure that the device is disconnected from the power source before installing anything. Unplug the device or disconnect the power supply.

Cables: Only use the cables supplied with the device. Damage resulting from the use of third-party cables is not covered by warranty. Beware of tripping hazards when laying cables.

Location: Electronic devices should never be placed on the ground between the cables. Never obstruct any vents the device may have. Ensure adequate ventilation.

Maintenance: This device is maintenance-free. Never open the casing. No settings can be made inside the device.

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1. Specifications

Casing — Desktop or 19", black (RAL 9005)

EDID Adjustments — EDID at each input port customizable

Input and Output Resolution — Up to 1920 x 1200 @ 60 (DVI and VGA)

Maximum Distance — Video (DVI/VGA): Up to 65.6 ft. (20 m);
Keyboard/Mouse: Up to 16.4 ft. (5 m)

OSD Languages — English, German, Spanish

Supported Keyboard Layouts — English, German, French, Italian, Spanish, Japanese

User Controls — Front panel: (8) buttons: (4) channel selection, (1) Full-Screen mode, (1) Quad mode, (1) PiP mode, (1) Win mode;
Back panel: (1) Power On/Off switch

Connectors — CPU: (4) DVI-I F, (4) 6-pin mini DIN F, (4) USB Type B F;
Console: (1) DVI-I F, (6) USB Type A F; (1) 3.5-mm audio, (1) TOSLINK®; (1) cinch;
Management port: (1) RJ-45 (serial RS-232); (1) USB Type B;

Power: (1) IEC 320

Indicators — (8) LEDs: (4) active channel, (1) Full-Screen mode, (1) Quad mode, (1) PiP mode, (1) Win mode

Temperature Tolerance — Operating: +41 to +113° F (+5 to +45° C);
Storage: -14 to +140° F (-10 to +60° C)

Relative Humidity — 5 to 65%, noncondensing

Power Supply — Internal AC adapter: 100- to 240-VAC, 50-/60-Hz;
Power consumption: 40 watts

Size — 1.7"H x 17.2"W x 9.2"D (4.4 x 43.6 x 23.4 cm)

Weight — 6.4 lb. (2.9 kg)

2. Overview

2.1 Introduction

The ServSwitch 4site Flex enables you to simultaneously display and manage four computers on a single console. It combines key features of a high-end Keyboard/Video/Mouse (KVM) switch and a digital multiviewer, scaling and converting videos at both inputs and output.

Display Modes

There are four display modes: Quad mode, Full-Screen mode, PiP mode, and Win mode.

Quad mode: In this mode, the screen is split into four fields of equal size, each displaying the entire screen contents of one source.

NOTE: If only (2) channels are active, you can go dual-screen instead of quad-screen. To do this, press the quad-screen button when only (2) channels are available.

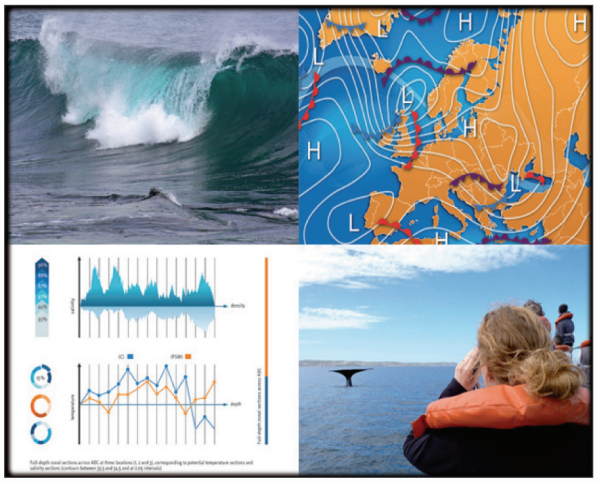


Figure 2-1. Quad mode screen.

Full-Screen mode: In Full-Screen mode, one of the four sources is displayed in full-screen size and maximum resolution.

Figure 2-2. Full-Screen mode screen.

PiP mode (Picture in Picture): Using this feature, the full-screen display of one of the four video sources is accompanied by one to three small images (thumbnails) of the other video sources that are displayed on the right hand side of the screen. This enables simultaneous monitoring.

Figure 2-3. PiP mode screen.

Win mode: In Win mode, each video source is displayed in its own separate, detached window. Position each of these windows and adjust their width and height. Set transparency. To position a window, use either the Hotmouse function, the front panel or the touchscreen. You can save presets of the window positioning.

Figure 2-4. Win mode screen.

2.2 Features

2.2.1 DVI and VGA

Supports resolutions of up to 1920 x 1200 @ 60 Hz for both DVI and VGA.

Any combination of DVI and VGA at all standard resolutions is possible at inputs and output. Analog video input is converted to digital. If an analog display is connected, ServSwitch 4site Flex converts the digital signal to analog at the output. Internally, ServSwitch 4site Flex processes video purely digitally, guaranteeing superior digital image quality.

2.2.2 USB and Keyboard for Keyboard/Mouse/Touchscreen/Trackball

Use either PS/2 or USB ports on the computer to connect the keyboard and mouse to ServSwitch 4site Flex. It supports any combination. To connect the console, ServSwitch 4site Flex features two USB ports for mouse, keyboard, touchscreen, or trackball connection.

2.2.3 Transparent USB 2.0

ServSwitch 4site Flex features a transparent high-speed USB 2.0 matrix: USB 2.0 devices (for example, printer, external memory, memory stick, Webcam, 3D mouse, finger printer) can be switched to the connected computers.

2.2.4 Operation

There are six ways to operate ServSwitch 4site Flex, switch channels, and select display modes:

1. Using the buttons on the front of the unit.

2. Using configurable hotkeys.

3. Using the unit's external configuration software on a remote computer.

4. Via a serial port using the protocol DCP XML.

5. Using mouse functions (Hotmouse).

6. Using a touchscreen.

Configure the ServSwitch 4site Flex via an on-screen display (OSD) that you can open and navigate using either keyboard commands or front-panel buttons.

The LEDs on the front panel indicate the unit's current status.

Use the serial (RS-232) or USB port for remote control and firmware updates.

2.3 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

- ServSwitch 4site Flex unit
- (1) power cable
- (1) 19" rackmount kit
- (1) CD with operation manual
- (1) USB Type A male to (2) PS/2 female adapter
- (1) flash upgrade kit

2.4 Hardware Description

Figures 2-5 and 2-7 show the front and back panels of the ServSwitch 4site Flex. Tables 2-1 and 2-2 describe their components.

2.4.1 Front Panel

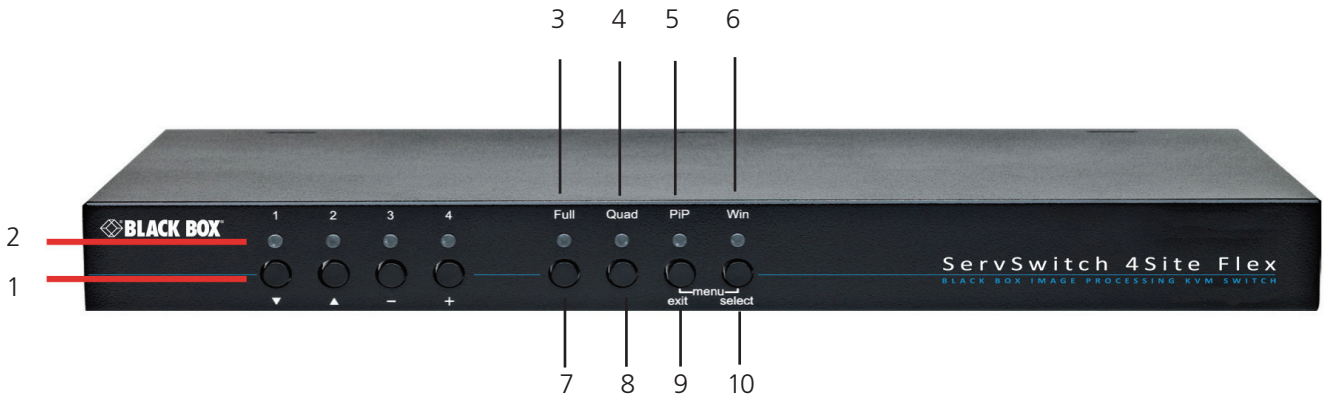


Figure 2-5. Front panel.

Table 2-1. Front-panel components.

Component Number in Figure 2-5	Component	Description
1	Buttons 1–4	These buttons activate the corresponding channel (computer port).
2	LEDs 1–4	When these LEDs light green, the corresponding channel (computer port) has been selected and is available for keyboard and mouse access. When an LED flashes green, there is no signal at the video input of the selected channel. An LED lights yellow when there is a signal at the video input, but another channel has been selected. When the LED is dark, there is no signal at the video input and another channel has been selected. The LEDs light blue when Win Mode preset configuration is being selected.
3	Full LED	This LED lights green when the unit is in Full-Screen mode.
4	Quad LED	This LED lights green when the unit is in Quad mode.
5	PiP LED	This LED lights green when the unit is in picture-in-picture (PiP) mode.
6	Win LED	This LED lights green when the unit is in Win mode.
7	Full button	Press this button to switch to Full-Screen mode.
8	Quad button	Press this button to switch to Quad mode.
9	PiP button	Press this button to switch to PiP mode.
10	Win button	Press this button to switch to Win mode.

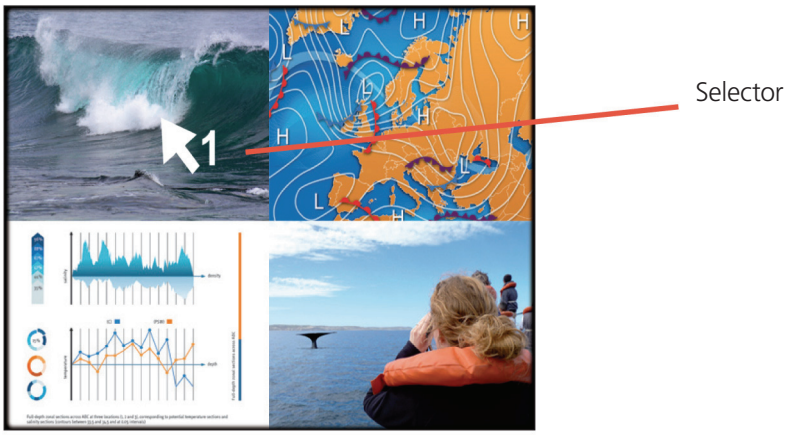


Figure 2-6. Selector screen.

You can also select the active channel using hotkeys and the arrow keys. The selection window closes once the channel selection timeout period has expired. The channel selection timeout is configured in the OSD under SYSTEM > QUAD MODE.

Use the "Time out of channel selection:" menu item to define how long the selector is to be displayed.

Setting output resolution to safe output modes

To set output resolution to 640 x 480 pixel @ 60 Hz simultaneously:

Press and hold Buttons 1 and 2 for 2 seconds. Use this feature when you cannot use the OSD (on-screen display is dark or illegible) because the output resolution setting is not supported by the monitor. After setting the correct output resolution (640 x 480 @60), you can choose a resolution the connected monitor supports in the OSD.

Alternatively, hold Buttons 1 and 2 again to cycle through the following video modes: VGA 640 x 480 @ 60, SVGA 800 x 600 @ 60, XGA 1024 x 768 @ 60, UXGA 1600 x 1200 @ 60, and the preferred video resolution found in the monitor EDID.

LEDs 1 to 4 and FULL indicate the selected mode in blue.

Hardware Reset

Press and hold Buttons 3 and 4 simultaneously for 5 seconds to reset the unit completely (video + mouse + keyboard)

Calling up OSD

Press and hold PiP and Win buttons simultaneously for 2 seconds to open the OSD menu.

NOTE: While the OSD menu is open, the active computer can still be operated by mouse or touchscreen.

2.4.2 Back Panel

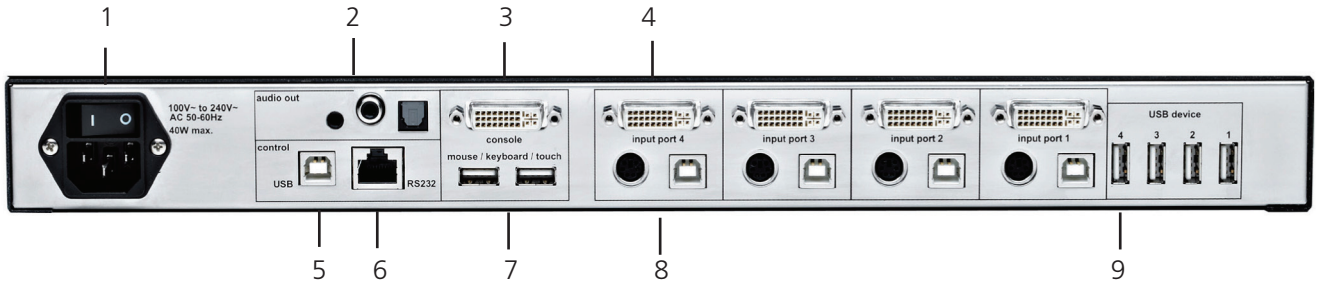


Figure 2-7. Back panel.

The rear panel of ServSwitch 4site Flex features three audio ports, four input source/computer ports, the console port (KVM), the USB control port, the serial RS-232 control port, four transparent high-speed USB 2.0 device ports, the power connection.

Table 2-2. Back-panel components.

Component Number in Figure 2-7	Component	Description
1	Plug	Plug for enclosed power cable.
2	Audio ports	Connect external speakers or headphones to the 3.5-mm analog stereo jack or digital cinch connector. The TOSLINK® optical audio connection enables digital audio output.
3	Monitor/DVI-I output	Connect analog or digital displays to this port.
4	(4) DVI-I inputs	Connect analog or digital video signals for up to four sources to these (4) DVI-I ports.
5	USB control port	Connect external USB control devices to this port to operate the ServSwitch 4site Flex remotely. Execute firmware updates or manage the device using ConfDev via the control ports.
6	RS-232/RJ-45 control port	Connect external serial control devices to this RJ-45 port to operate ServSwitch 4site Flex remotely. (Connect to this port to access the OSD menu from a computer using the ConfDev device configuration tool. The serial RS-232 port is also used for firmware updates.
7	(2) USB ports (console)	(2) USB ports enable connecting keyboard, mouse, touchscreen, or trackball. Using a USB hub, you can connect multiple keyboards and mice. They will work in share mode with an inactivity timeout of three seconds.
8	USB or PS/2 keyboard and mouse (computer) ports	Each computer can be connected wiht PS/2 or USB-B for keyboard and mouse.
9	(4) USB Type A ports	Connect USB devices (printer, memory stick, finger printer, 3D mouse) to the four transparent USB ports. The transparent USB 2.0 matrix switches USB 2.0 peripherals to computers connected to the ServSwitch 4site Flex.

3. Installation

To reduce the need for long cables, ServSwitch 4site Flex is best placed as close as possible to its video sources. By default, ServSwitch 4site Flex is delivered as desktop version. Using the rackmount kit (included), it may also be mounted in a 19" rack.

Keyboard, monitor, mouse (console) and USB devices are connected to ServSwitch 4site Flex using the corresponding cables (DVI, USB or PS/2). KVM extenders will enable you to work remotely via a CAT5, a fiber optic, or an Ethernet connection.

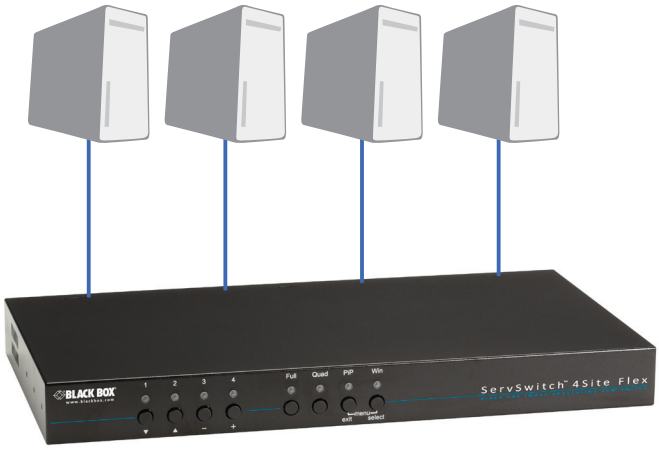


Figure 3-1. Computers connected to the ServSwitch 4site Flex.

3.1 Connecting the Unit to Power

Plug the power cable into the power plug located on the rear panel of ServSwitch 4site Flex, but do not turn the power on.

3.2 Connecting the Console (Monitor, Keyboard, Mouse, Touchscreen, Trackball)

1. Connect your monitor to the monitor port of ServSwitch 4site Flex via VGA-DVI cable (analog) or DVI cable (digital) up to 64 feet (20 meters). For greater distances, use a DVI or VGA extender.
2. Connect your USB mouse and keyboard to the USB-A ports on the console up to 16 feet (5 meters). For greater distances, use a KVM or USB extender.
3. PS/2 mouse and keyboard can be connected to ServSwitch 4site Flex using a PS/2-USB adapter.
4. Connect your touchscreen to the DVI-I port and the USB-A port.

Figure 3-2. Connecting the KVM console with digital or analog monitor, USB mouse, and USB keyboard.

NOTE: The maximum cable length for video (DVI/VGA) is up to 64 feet (20 meters). Maximum cable length for USB/PS2 keyboard and mouse is up to 16 feet (5 meters). For greater distances, ServSwitch 4site Flex supports most KVM extenders, video (DVI / VGA) extenders, and USB extenders.

3.3 Connecting Video Sources/Computers

1. Switch off the computer and disconnect the keyboard, monitor and mouse.
2. Connect keyboard and mouse ports of ServSwitch 4site Flex to the computer ports either with a single USB cable or via the PS/2 interface (use the Y cable) up to 5 meters. For greater distances use a KVM or USB extender.
3. To connect an analog video / computer source (VGA) to ServSwitch 4site Flex, use a VGA-DVI cable. Digital video sources are connected via a DVI cable up to 20 meters. For greater distances, use a DVI or VGA extender.

3.4 Connecting USB Devices

Connect a USB device to one of the four transparent USB ports to switch it to computers connected to ServSwitch 4site Flex. ServSwitch 4site Flex supports transparent USB devices such as printer, external memory, 3D mouse, and finger printer.

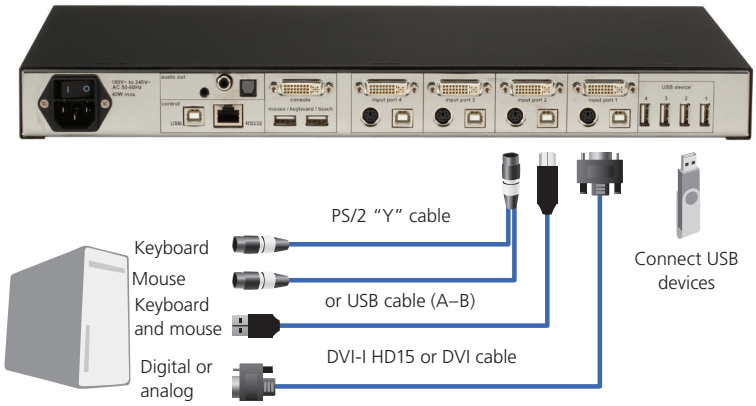


Figure 3-3. Typical installation.

3.5 Powering Up the System

Switch on ServSwitch 4site Flex with the power switch on the rear panel. All front-panel LEDs light up briefly, indicating that ServSwitch 4site Flex is ready for operation. ServSwitch 4site Flex is now in Quad mode (default).

Power up all connected computers. ServSwitch 4site Flex recognizes all input video sources automatically and displays them on your monitor screen.

To select another display mode, use the relevant keyboard commands or buttons on the front panel.

3.6 Connecting Audio

The ServSwitch 4site Flex can be connected to external, powered speakers or audio devices so that sound coming from the four connected sources can be played back.

Three different connection options are made available (see Figure 3-4):

1. 3.5-mm analog stereo jack
2. Digital cinch connector
3. TOSLINK optical audio jack

After the speakers have been physically connected to the ServSwitch 4site Flex:

- Open the OSD and navigate to COMPUTER > AUDIO
- Enable audio output
- Select the audio source and adjust the volume.

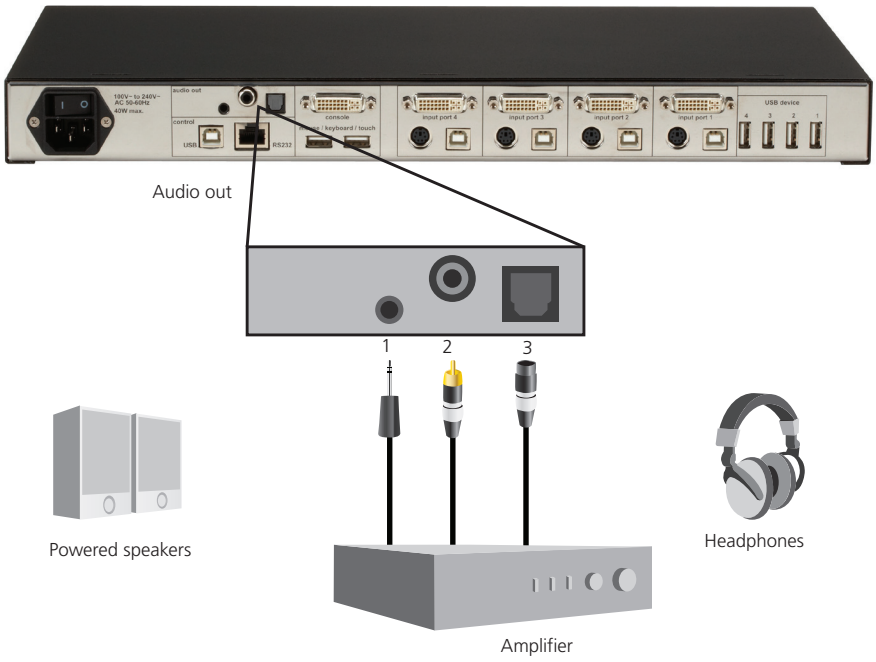


Figure 3-4. A variety of device options are available to connect to the ServSwitch 4site Flex for audio output.

NOTE: Powered speakers or headphones can also be connected directly to the ServSwitch 4site Flex, eliminating the need for an amplifier.

4. On-Screen Display

4.1 On-Screen Display (OSD)—Overview

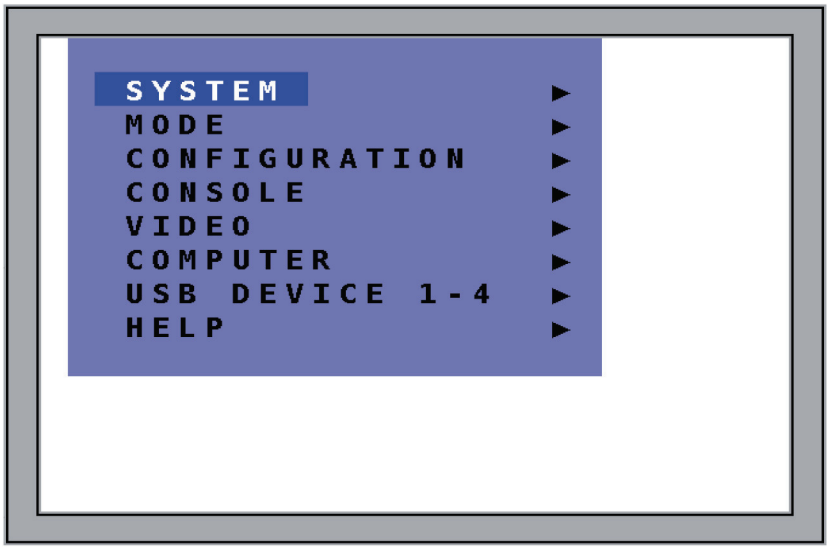


Figure 4-1. OSD screen.

SYSTEM	HDCP	HDCP status
	HOTKEY	Multiple Hotkey/Double Click Hotkey
	HOTMOUSE	Hotmouse Recognition, Hotmouse Timeout
	QUAD MODE	Channel Selection Timeout
	WIN MODE	Appearance settings for windows
	OSD POSITION	Position of OSD window
	OSD LANGUAGE	English/German/Spanish
	SECURITY	Set security level
	DISABLE CHANNEL	Deactivate unused channels
	CONTROL	Device control via DCP-XML protocol (RS-232)
MODE	CURRENT	Set the current channel and mode
	START	Set the channel and mode in which the device should boot
CONFIGURATION	BACKUP	Save configuration settings
	RECALL	Restore last saved configuration
	FACTORY RESET	Reset to factory default settings
CONSOLE	VIDEO OUTPUT	Video resolution and frequency
	KEYBOARD	Keyboard layout
	TOUCH SCREEN	Calibration/Mouse key emulation/Enlarge on touch
	FADE	Indicate use of smooth transitions
	MULTI MONITOR	Assign mouse/keyboard to video
	BACKGROUND	Select background type
	EDID	Display of EDID monitor data
VIDEO	INPUT STATUS	Display computers' video input resolutions
	DVI/VGA	Choose input signal: DVI/VGA - DVI - VGA
	ROTATION	Rotate the screen display at different degrees

VIDEO (continued)	CROPPING	Crop the display of video sources
	BRIGHTNESS	Set brightness of analog input signal
	CONTRAST	Set contrast of analog input signal
	HORIZ POSITION	Horizontal screen position
	VERT POSITION	Vertical screen position
	SCREEN WIDTH	Set screen width of analog input signal
	PHASE	Adjust phase of analog input signal
	FORMAT	Fit input format to screen
COMPUTER	CHANNEL MAPPING	Assign an input port to a channel
	AUDIO	Enable audio output/Audio source selection/Volume
	NAME 1–4	Assign computer names
	KEYBOARD	Display type of keyboard (PC1, PC2, PC3, or USB)
	MOUSE	Display type of mouse (PS/2, PS/2 Wheel, or USB)
		Set USB mouse positioning (absolute/relative)
	RESET PS/2	Reset PS/2 mouse and keyboard
	EDID/DDC	Program input EDID
USB DEVICE 1-4	USB PORT STATUS	Shows USB 2.0 matrix status and allows USB ports to be assigned to a device
HELP	ABOUT	Firmware / hardware version, serial number, etc
	HOTKEY	List of keyboard commands
	CONTACT	Contact information

4.2 OSD—Main Menu Window

There are three ways to open the OSD main menu (Figure 4-2):

1. Use a keyboard command: “hotkey“ + “O.” (letter “O”)

2. Simultaneously press front-panel buttons “PiP“ + “Win“ for longer than one second.

3. Remotely open the OSD via ConfDev program on an external PC with serial or USB connection.

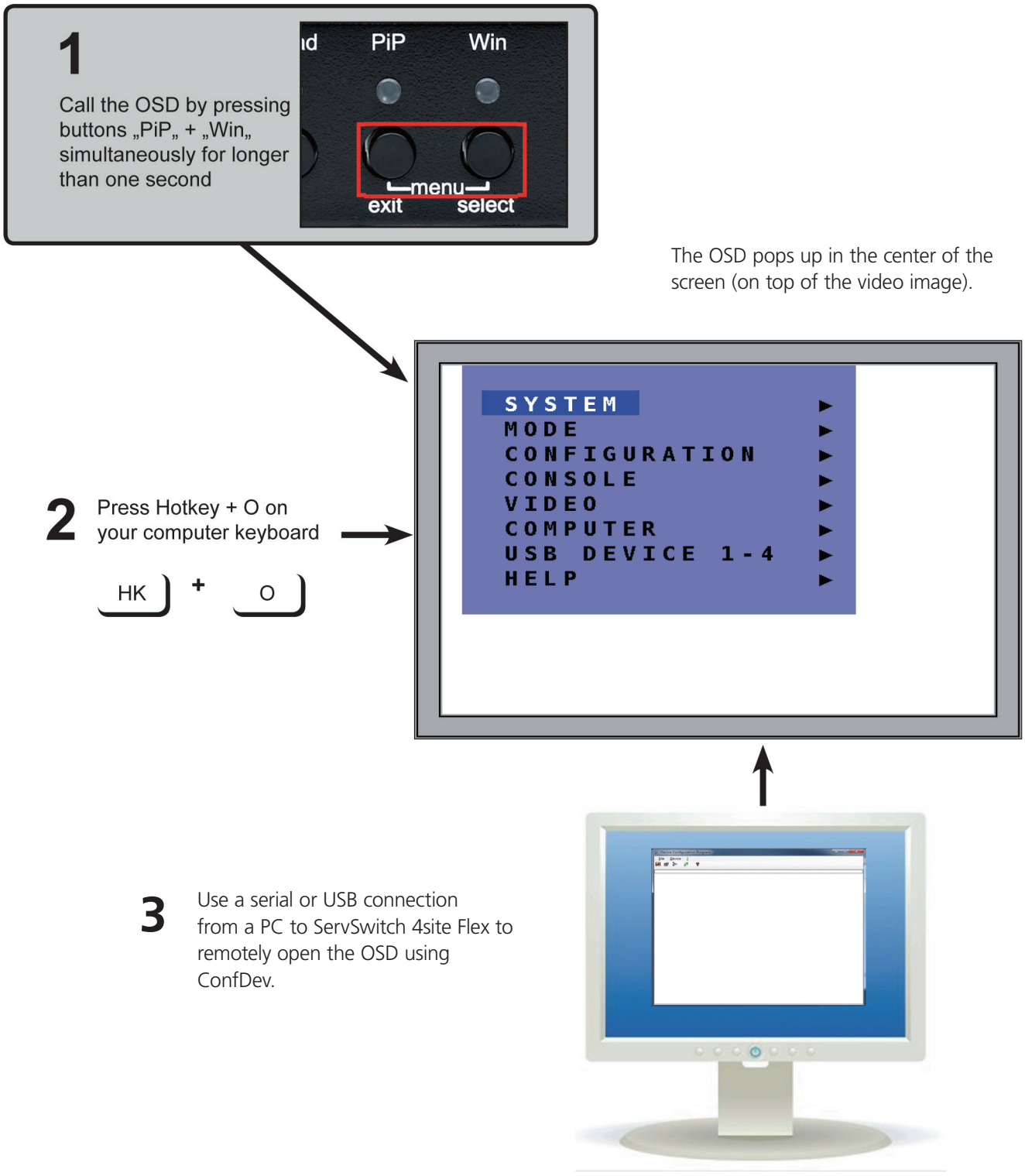


Figure 4-2. Three ways to open the OSD main menu window.

4.3 OSD—Navigation

To navigate the OSD, either use the buttons on the front panel or your keyboard.

4.3.1 Navigation with Keyboard

To navigate from one field to the next in the OSD menu, use the UP and DOWN arrow keys or TAB/SHIFT-TAB keys. Use the LEFT and RIGHT arrow or + (PLUS) and – (MINUS) keys to change the value in the current field.

Press ENTER to select a menu item.

Press ESC to return to the previous window (higher menu level) or exit the OSD. Changes in parameters are saved automatically.

4.3.2 Navigation Using the Buttons on the Front Panel

Figure 4-3. Front panel.

Navigation using the buttons on the front panel is analogous to using the console keyboard. Buttons 1 and 2 correspond to the UP and DOWN arrow keys and Buttons 3 and 4 to the LEFT and RIGHT arrow keys or +/- keys. Confirm your entry by pressing the Win/select button.

Press the PiP/exit button to return to the previous page (higher menu level) or exit the OSD. Changed settings are saved automatically.

NOTE: Hotkey commands are possible while the OSD window is open.

4.4 OSD System

4.4.1 HDCP Status

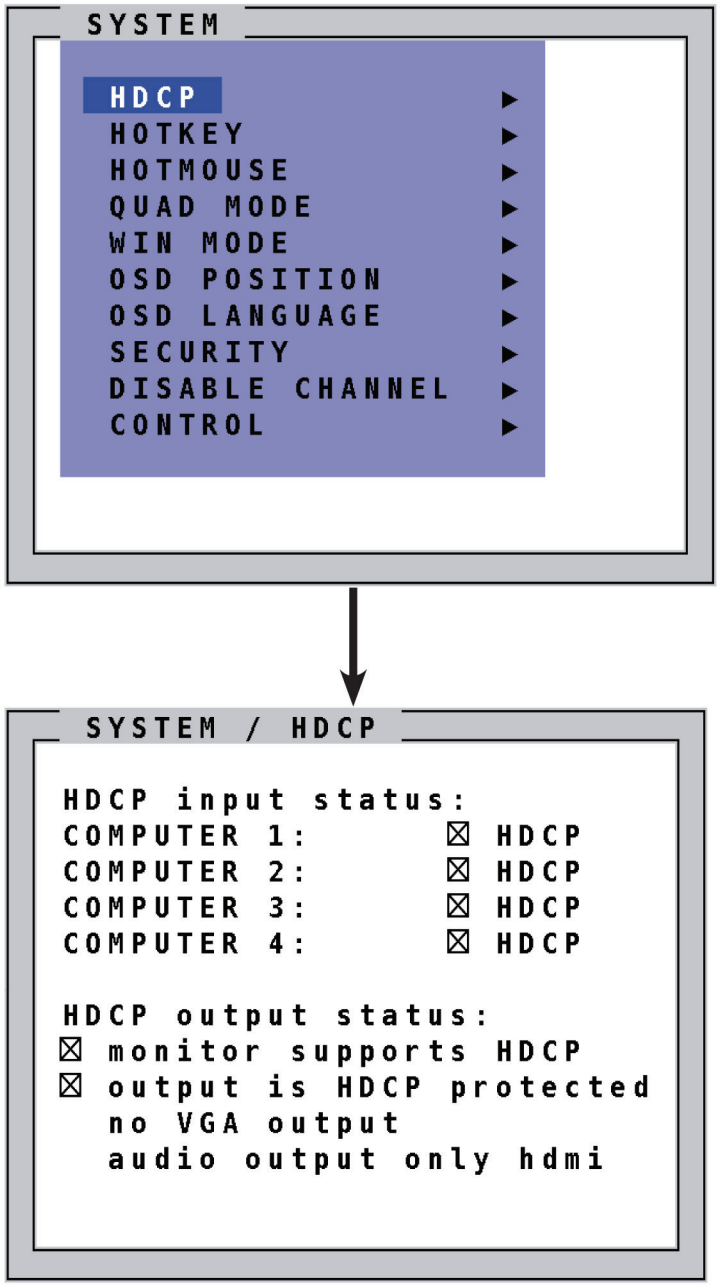


Figure 4-4. System>HDCP Status screen.

Use the arrow keys to navigate in the SYSTEM menu to the entry HDCP and press ENTER/SELECT to open the HDCP window.

The SYSTEM/HDCP window displays the status of HDCP input and output encoding. HDCP (High-bandwidth Digital Content Protection) is an encoding system used to secure and transmit audio and video.

In the upper part of the window, the HDCP status of the four input signals is displayed. When a checkbox is marked, the source is transmitting an HDMI signal with HDCP encoding.

ServSwitch 4site Flex displays this signal only when HDCP encoding is capable of being activated on the output device as well.

The lower portion of the window displays the HDCP status of the output. The first line shows whether the connected monitor supports HDCP.

When checked, the next line indicates whether the signal proceeding from the ServSwitch 4site Flex is protected by HDCP. If the output signal is HDCP encoded, the ServSwitch 4site Flex puts out neither analog video signal nor any separate audio signal.

4.4.2 Hotkey

Navigate with the arrow keys in the SYSTEM menu to the entry HOTKEY and press the ENTER/SELECT key to open the HOTKEY window.

Two different hotkey modes are available:

- For multiple hotkey commands you can define one to four keys that are pressed simultaneously to enter the command mode. Selectable keys are: STRG, SHIFT, ALT, and WINDOWS.
- For double-click hotkey commands you can choose one key, that is double-clicked to enter the command mode. Selectable keys are: STRG, SHIFT, ALT, and SCROLL.

To change the hotkey mode or select another hotkey, navigate with the TAB or ARROW UP/DOWN keys to the respective field and use the ARROW LEFT/RIGHT or the +/- keys to change the setting.

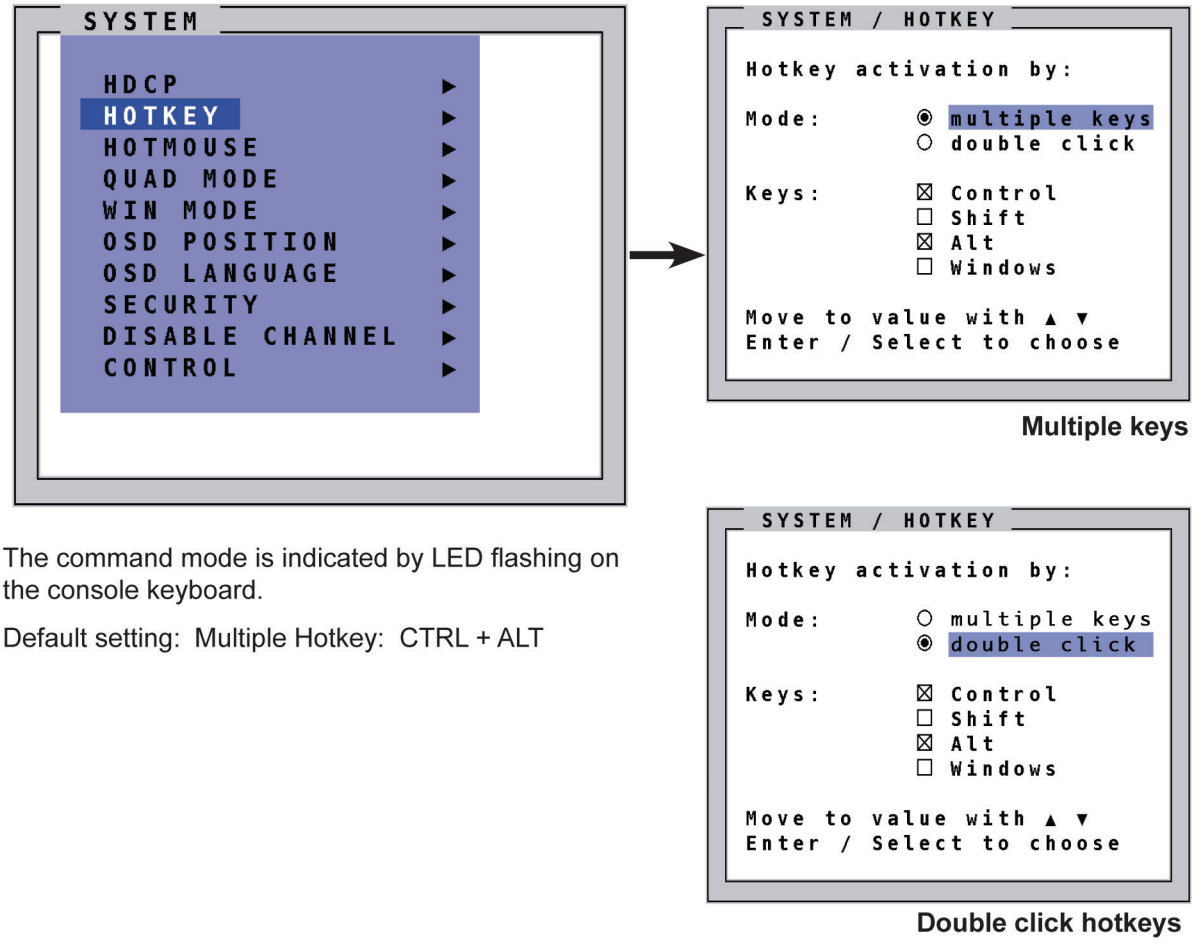


Figure 4-5. System>Hotkey screen.

NOTE: For a list of hotkeys to operate ServSwitch 4site Flex, see Appendix A, Keyboard Commands.

4.4.3 Hotmouse

Navigate with the arrow keys in the SYSTEM menu to the entry HOTMOUSE and press ENTER/SELECT to open the HOTMOUSE window.

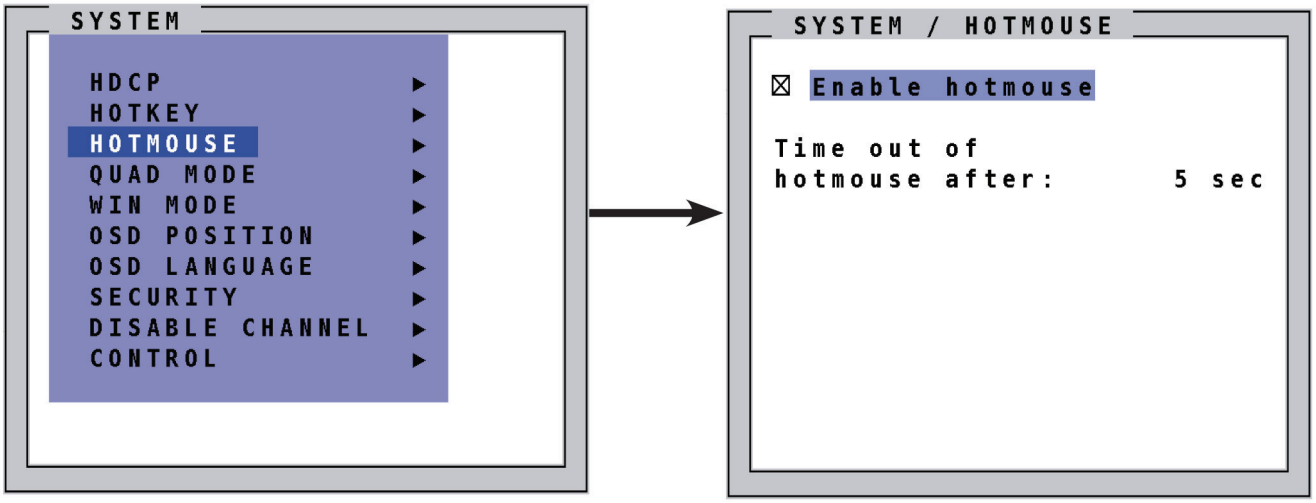


Figure 4-6. System>Hotmouse screen.

Hotmouse is an exclusive function that comes with ServSwitch 4site Flex. It works with your standard mouse or trackball.

To activate Hotmouse operation:

1. Navigate to "Enable Hotmouse"

2. Change the setting to "Yes."

There are two modes of Hotmouse operation: Hotmouse Cursor and Hotmouse Menu.

Although Hotmouse Cursor supports only a limited set of operations, Hotmouse Menu allows execution of all switch operations and display mode settings.

While the Hotmouse function is activated, the active computer can still be operated by keyboard.

For a detailed description of Hotmouse, Hotmouse functionalities, and Hotmouse Menu, see Chapter 12, Hotmouse.

4.4.4 Quad Mode

Use arrow keys to navigate in the SYSTEM menu to the entry QUAD MODE and press ENTER/SELECT to open the QUAD MODE window.

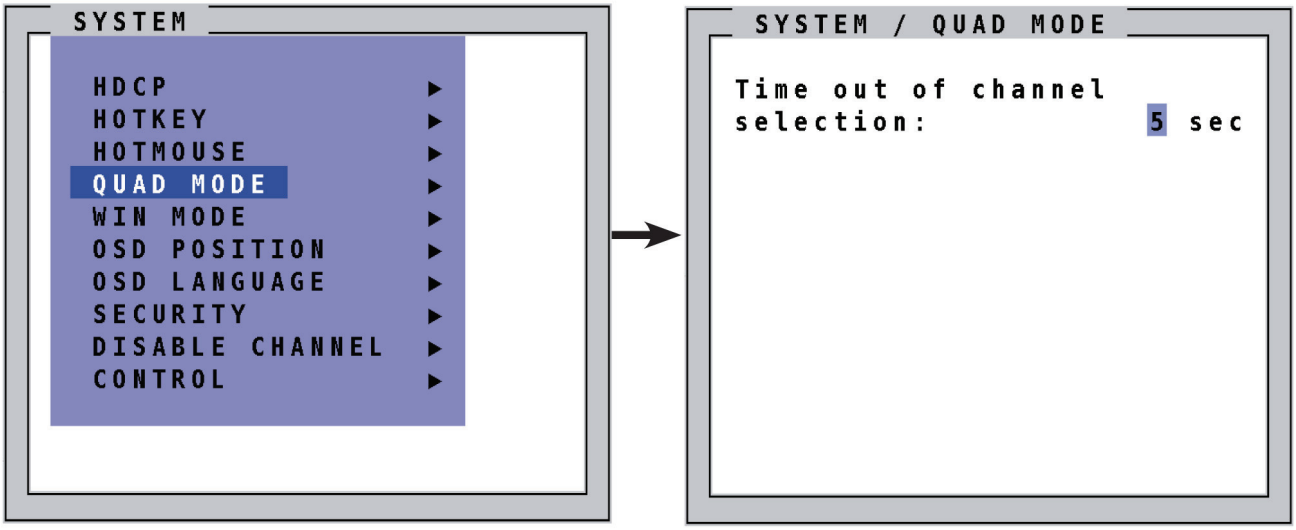


Figure 4-7. System>Quad Mode screen.

Channel selection timeout defines the period (1 to 30 seconds) after which the selector will close automatically. Default setting is 5 seconds.

Figure 4-8. Quad mode.

To open the active channel in Quad mode:

1. Press hotkey "Q."

2. The yellow border indicates the active channel (mouse and keyboard enabled). Alternatively, press front-panel button "Quad."

To switch the selector from an active channel to another:

1. Press hotkey + arrow key.

2. After the selector timeout has expired, the selector closes.

4.4.5 Win Mode

Navigate with the arrow keys in the SYSTEM menu to WIN MODE and press ENTER/SELECT to open the Win mode window.

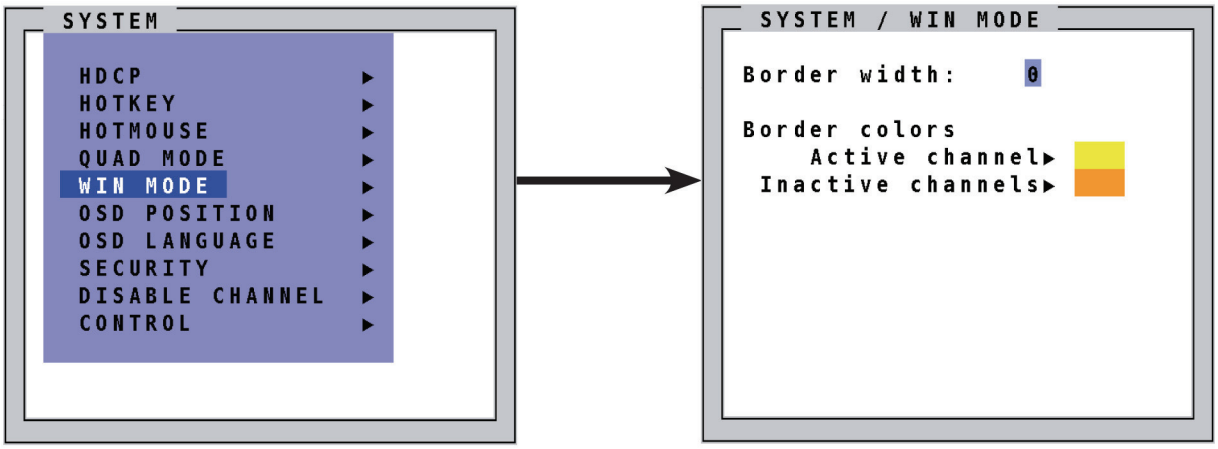


Figure 4-9. System>Win mode screen.

Border width: Set the width of the borders, which are drawn around the signals in Win mode. When the border width is zero, no borders are shown.

Border colors

- Active channel: Press enter/select to open the SELECT COLOR menu and set the color for the active channel.
- Inactive channels: Press enter/select to open the SELECT COLOR menu and set the color for the inactive channels.

Figure 4-10. Selector.

In Win mode, use hotkey "1–4" to select a channel or window. (Or you can use the hotmouse function or front-panel buttons 1–4 to select a channel or window.) When a channel has been selected, a colored border will appear around the window of the active channel. The selector will also be visible. You can also press front button "Win" and select a preset.

After the expiration of the selector timeout, the selector closes.

Popup buttons

Move the hotmouse cursor to the top right corner of the signal window, and the following buttons will appear:

O = Open OSD hotmouse context menu.

S = Swap signal windows. After this is selected, the other window is clicked.

R = Toggle aspect ratio locking for current window.

4.4.6 OSD Position

Navigate with the arrow keys in the SYSTEM menu to the entry OSD POSITION and press ENTER/SELECT to open the OSD POSITION window.

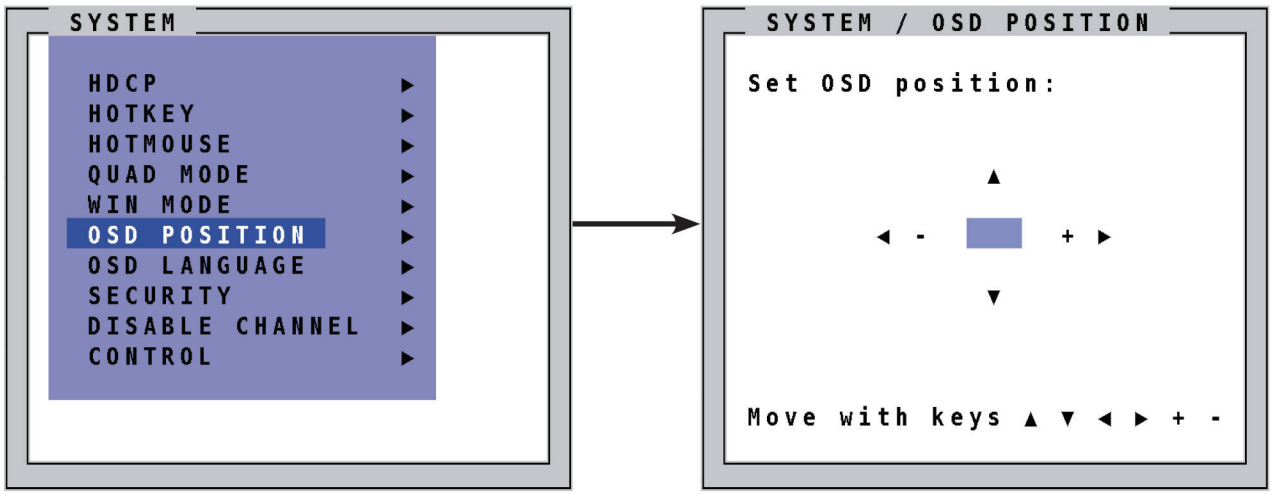


Figure 4-11. System>OSD Position screen.

Use this function to move the OSD window to any position on the screen.

4.4.7 OSD Language

Navigate with the arrow keys in the SYSTEM menu to the entry OSD LANGUAGE and press ENTER/SELECT to open the OSD LANGUAGE window.

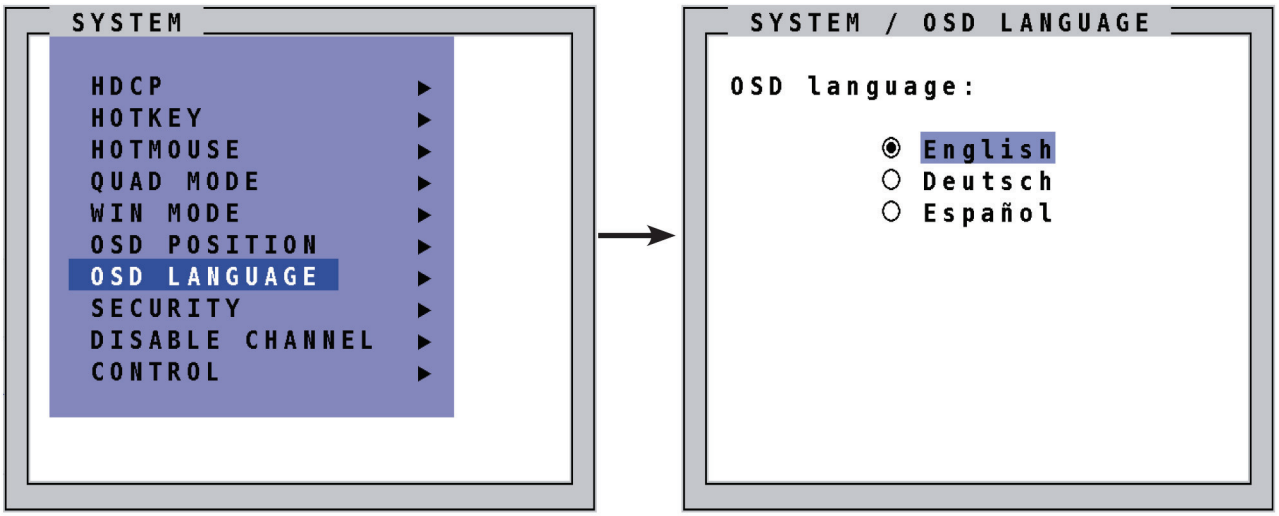


Figure 4-12. System>OSD Language screen.

Set OSD LANGUAGE to either English (default), Deutsch (German) or Español (Spanish).

4.4.8 Security Levels

Navigate with the arrow keys in the SYSTEM menu to the entry SECURITY and press ENTER/SELECT to open the SECURITY window.

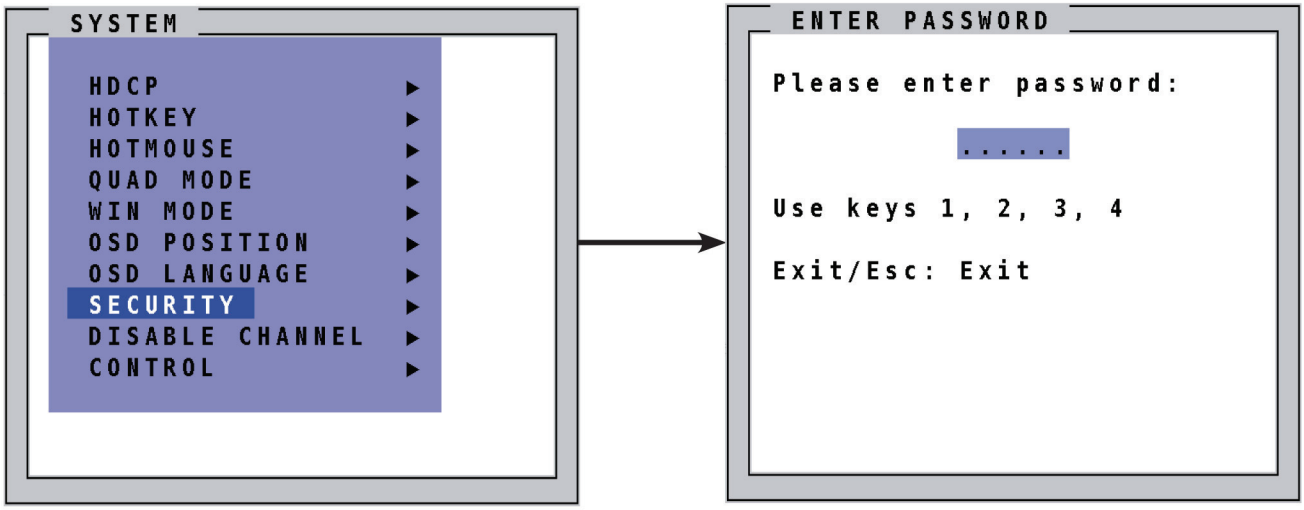


Figure 4-13. System>Enter Password screen.

The SECURITY feature allows you to reduce the functional range of ServSwitch 4site Flex. Eight security levels are available.

By default, all functions are enabled (security level 0). To change the security level, you must first enter a predefined password. This six-digit password is enclosed separately with the deliverables of ServSwitch 4site Flex and should only be accessible to authorized persons (administrators etc.).

After entering the password on the keyboard or front panel (password is not displayed in password field), the SECURITY window opens.

Enter the desired security level (0 to 8) under "Select security level."

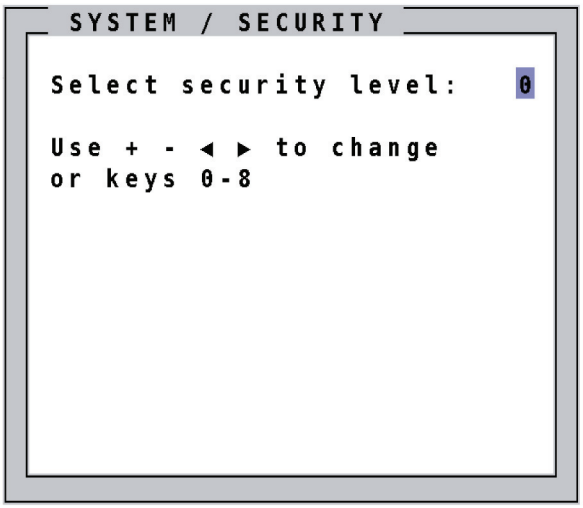


Figure 4-14. System>Security screen.

NOTE: Before changing the security level, set the configuration you wish to work with to the higher security level, under MODE > START. This configuration will be maintained when ServSwitch 4site Flex is reset, in case of power failure, or when power is turned off and on again.

SECURITY LEVEL 8

Security Level 8 allows you to work only on one channel (computer) in a predefined display mode (Quad, Full-Screen, or PiP mode). No settings can be changed, apart from the SECURITY menu item, where you can change the security level.

SYSTEM	SECURITY

SECURITY LEVEL 7

With Security Level 7, you can open OSD windows that only show display modes and device settings.

SYSTEM	HDCP
CONSOLE	VIDEO OUTPUT/EDID
VIDEO	INPUT STATUS
COMPUTER	NAME 1-4/ KEYBOARD/MOUSE/EDID/DDC
HELP	HOTKEY/ABOUT/CONTACT

SECURITY LEVEL 6

With Security Level 6, you have the following additional operations:

SYSTEM	CONTROL
CONSOLE	FADE

- Setting of active channel using front-panel buttons, Hotkeys, or Hotmouse.
- Selecting channel with PiP button in Quad mode.
- Changing the directly selectable PiP channel in PiP mode single direct.

SECURITY LEVEL 5

With Security Level 5, you have the following additional operations:

- Setting of display mode (Quad/Fullscreen/PiP) using front-panel buttons, Hotkeys or Hotmouse.

SYSTEM	TEST PATTERN
CONSOLE	BACKGROUND

SECURITY LEVEL 4

With Security Level 4, you have the following additional settings in the OSD:

SYSTEM	OSD POSITION/WIN MODE
MODE	PIP/START
CONFIGURATION	RECALL
COMPUTER	AUDIO
VIDEO	FORMAT

- Modify display-mode settings in Hotmouse Menu.
- Changing both channels in Dual mode.
- Changing the fixed PiP channel in PiP mode.

SECURITY LEVEL 3

With Security Level 3, you can use the following additional settings in the OSD:

SYSTEM	OSD LANGUAGE
VIDEO	BRIGHTNESS/CONTRAST/HORIZ POSITION/VERT POSITION SCREEN WIDTH/PHASE
USB DEVICE 1–4	

SECURITY LEVEL 2

With Security Level 2, you can use the following additional settings in the OSD:

SYSTEM	HOTKEY/HOTMOUSE/QUAD MODE
CONSOLE	KEYBOARD/Touchscreen

SECURITY LEVEL 1

With Security Level 1, you have the following additional settings in the OSD:

SYSTEM	DISABLE CHANNEL
CONSOLE	MULTIMONITOR/VIDEO OUTPUT
VIDEO	DVI/VGA/ROTATION/CROPPING
COMPUTER	CHANNEL MAPPING/MOUSE/RESET PS/2

• Switch video output to VGA (using hotkey “V” or front panel buttons 1+2)

SECURITY LEVEL 0

This is the default setting of ServSwitch 4site Flex. All settings are allowed and all functions are enabled.

4.4.9 Disable Channel

Navigate with the arrow keys in the SYSTEM menu to the entry DISABLE CHANNEL.

Press ENTER/SELECT to open the DISABLE CHANNEL window.

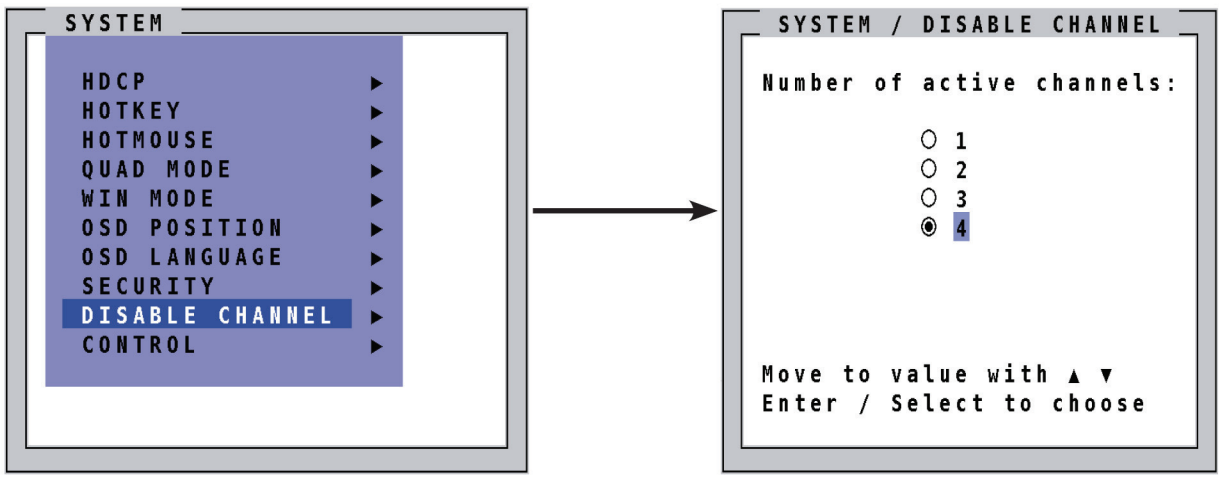


Figure 4-15. System>Disable Channel screen.

If two or three computers or video sources are connected to ServSwitch 4site Flex, use the DISABLE CHANNEL feature to ensure that for the unused channels:

a) message "no signal input x" is not shown in Quad mode

b) PiP images are not displayed on screen

c) these channels are not selectable in Full-Screen mode

For example, if you have connected three computers (Channel 1 to 3) to ServSwitch 4site Flex, use the arrow keys to navigate to the number 3 and confirm by pressing ENTER/SELECT.

NOTE: To use the "DISABLE CHANNEL" feature, computers/video sources must be connected to ServSwitch 4site Flex in ascending order from Channel 1 to 4.

Example in Quad mode:

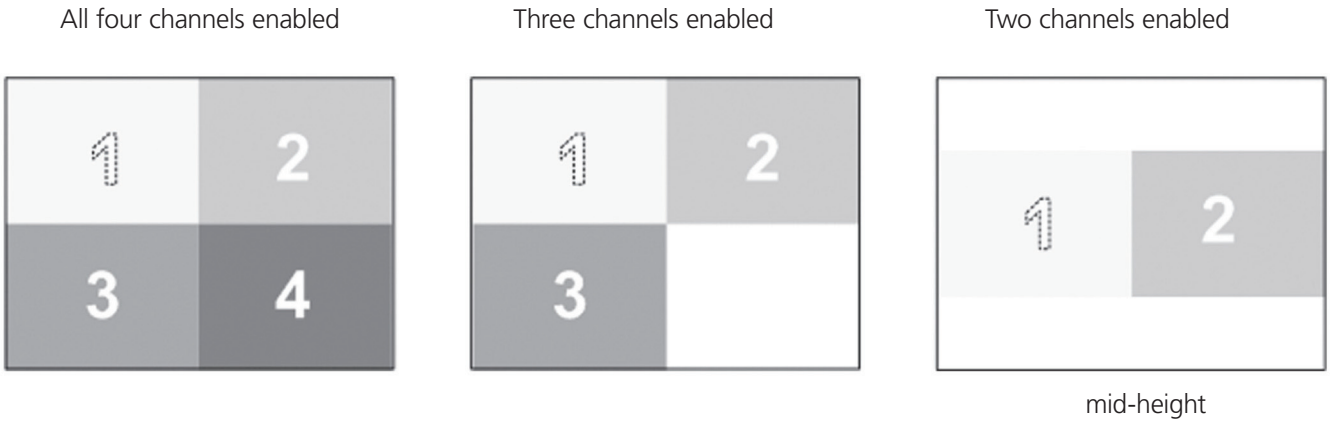


Figure 4-16. Quad mode example.

4.4.10 Control

Navigate with the arrow keys in the SYSTEM menu to the entry CONTROL.

Press ENTER/SELECT to open the CONTROL window.

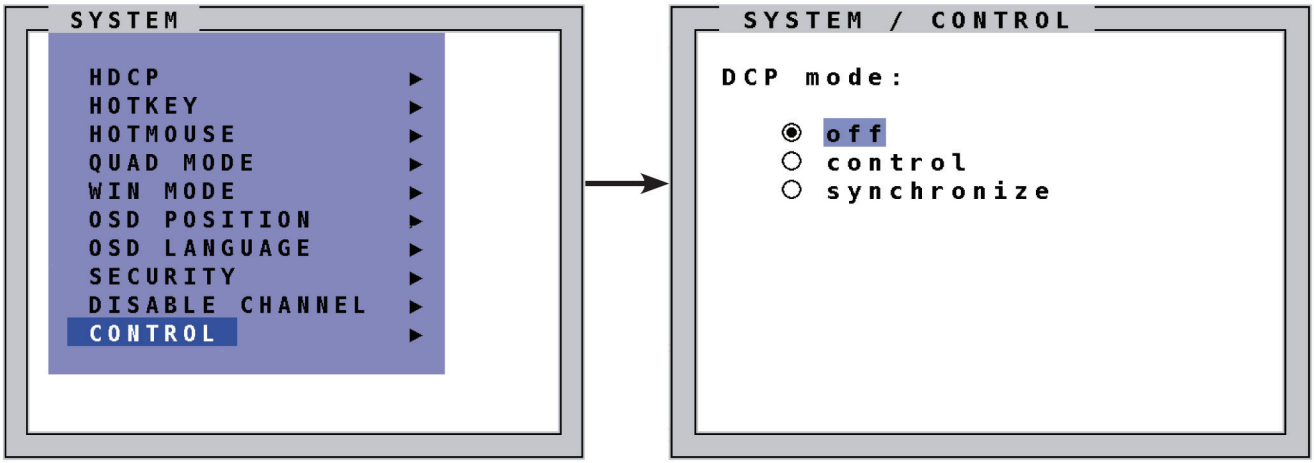


Figure 4-17. System>Control screen, Off selected.

The device can be controlled via Device Control Protocol (DCP), an XML-based protocol (see Appendix E).

There are two DCP modes:

1. DCP control, which allows external control of the display mode.

2. DCP synchronize, which keeps several ServSwitch 4site Flex devices in the same display mode.

NOTE: The default setting is "off," which prevents any external CONTROL.

Use a serial or USB cable to connect a control unit to the RS-232 port (RJ-45) on the ServSwitch 4site Flex back panel. To synchronize several devices, special Y cables are required.

Settings for the connection are: Transfer rate 57600 baud, 8 data bits, no parity, 1 stop bit, no flow control.

The two control modes operate as follows:

DCP control

This mode allows direct control of a single ServSwitch 4site Flex by means of a control device, for example, a computer.

The control device can query and change the mode of ServSwitch 4site Flex.

ServSwitch 4site Flex responds to each DCP message sent by the control device with a DCP reply.

This reply includes the values of all settings queried or set by means of the last message. If the message sent by the control unit contains errors, the ServSwitch 4site Flex will reply by sending an error message.

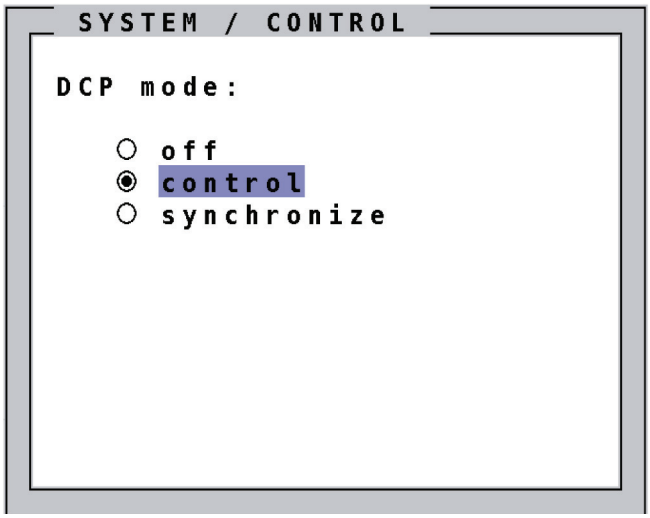


Figure 4-18. System>Control screen, Control selected.

Example of DCP control

A ServSwitch 4site Flex is controlled via DCP-XML by a computer connected by serial cable or USB.

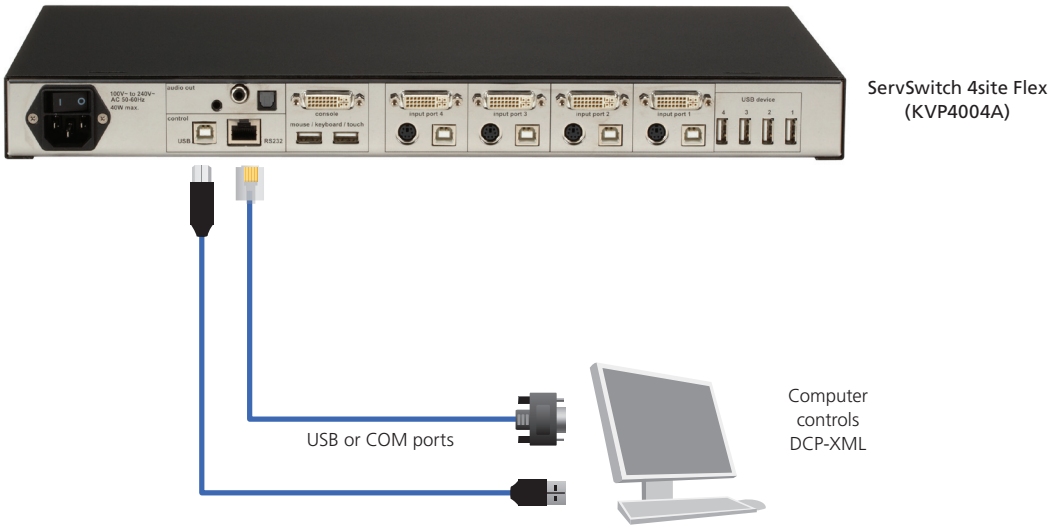


Figure 4-19. DCP control example.

For an introduction to the DEVICE CONTROL PROTOCOL (DCP), see Appendix E.

DCP synchronize

Use this mode to keep several ServSwitch 4site Flex devices in the same mode.

Every change in settings initiated in the first ServSwitch 4site Flex by hotkeys, hotmouse, front-panel buttons, or a controlling device synchronizes the modes of all connected devices via DCP messages.

Use special Y cables for the synchronization.

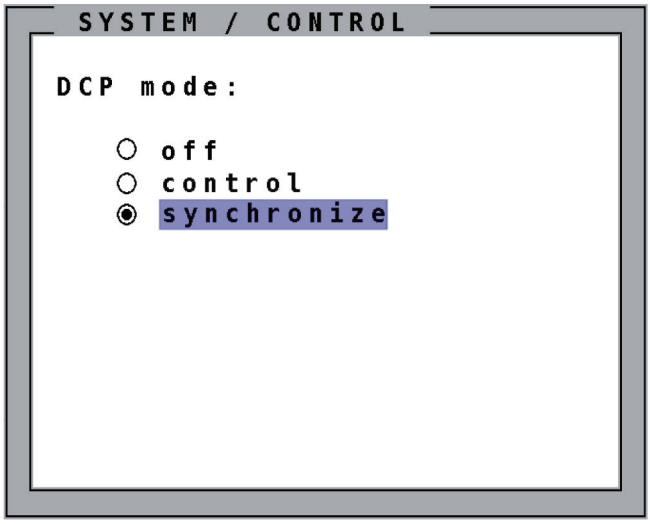


Figure 4-20. System>Control, DCP mode Synchronize selected.

IMPORTANT: Each time you restart a ServSwitch 4site Flex set to synchronize, it will send all its settings to the next connected device. This process also takes place after activating synchronize in the OSD menu.

When starting a chain of devices, always start by first switching on the device at the end of the chain. When the device has completed its startup phase and sent its DCP messages, switch on the next device in the chain.

Finally, switch on the first device in the chain, which synchronizes the settings of all other devices in the chain with its own settings as it starts up.

Example of DCP synchronization

ServSwitch 4site Flex 2 and 3 are synchronized with ServSwitch 4site Flex 1.

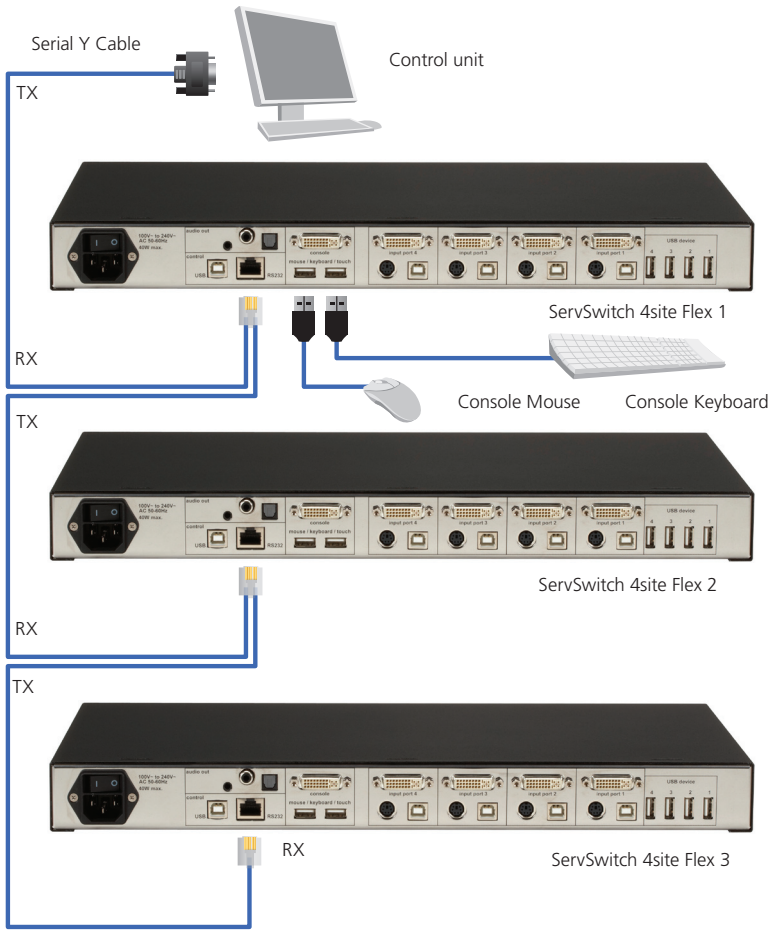


Figure 4-21. DCP synchronization example.

To synchronize, ServSwitch 4site Flex 1 sends every change in settings as a DCP message via the serial Y to the RX input of ServSwitch 4site Flex 2.

ServSwitch 4site Flex 2 adopts the settings and sends a DCP message via TX output over the Y cable to the RX input of ServSwitch 4site Flex 3.

The synchronization chain can be any length.

Do not connect the last device in the chain to the first device (that is, do not create a loop).

Security Levels

The security level settings in the OSD menu previously described also apply to control via DCP messages. Queries are possible up to Security Level 7.

Table 4-1 shows the maximum security levels for simple element settings. These settings may be changed via DCP up to the specified protection level.

Table 4-1. Maximum security levels.

Item	Maximum Security Level
CONSOLE CHANNEL	6
VIDEO CHANNEL	6
VIDEO LAYOUT	5
PiP LAYOUT	4
PiP HEIGHT	4
PiP OFFSET	4
PiP ZOOM	4
PiP CHANNEL	4
DUAL CHANNELS (L/R)	6
PiP SCAN TIME	4

5. OSD Mode

5.1 Current

Defines the current mode in which the device should run.

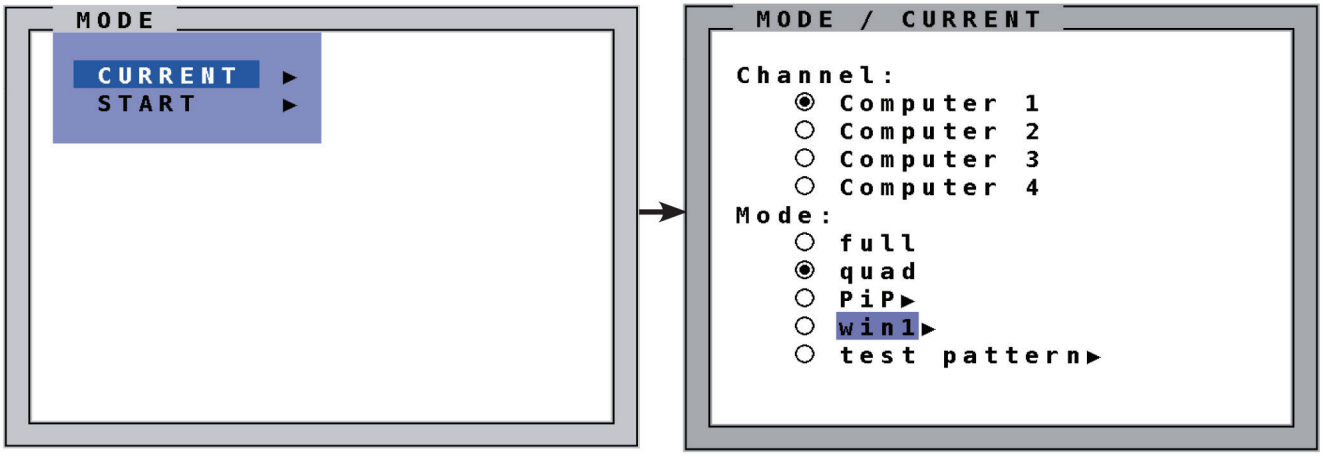


Figure 5-1. Mode>Current mode screen.

Choose from Full-Screen, Quad, PiP, or Win Mode, or Test Pattern.

5.2 START

Sets the mode in which the device should boot.

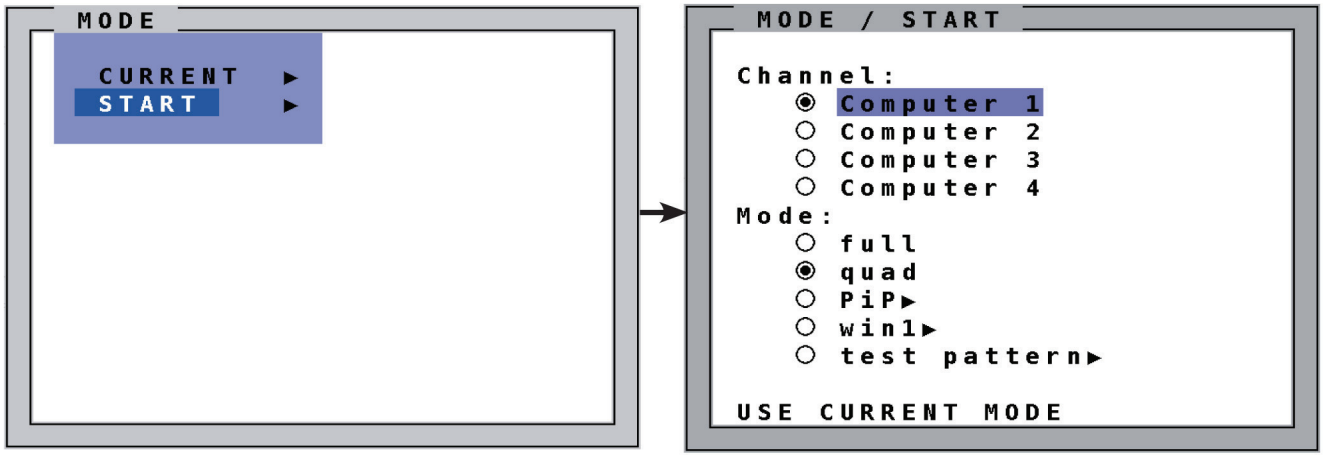


Figure 5-2. Mode>Start mode screen.

This feature allows you to define the start configuration, i.e. the display mode (Full-Screen, Quad, PiP, or Win Mode, or Test Pattern), active channel, and PiP settings that ServSwitch 4site Flex uses after a reset or when the system is powered up.

When the START menu is called up, the current start configuration is displayed. To modify your start configuration, change parameters in the channel, mode, and PiP fields. Press ESC to save the new parameters and exit the START menu.

Choose "Use current mode" to adopt the current settings as start mode. Use arrow keys to navigate to "Use current mode" and confirm by pressing ENTER.

The factory default start mode is Quad-mode with active channel 1.

See OSD—MODE—CURRENT/START—PiP for details on setting PiP mode to boot. See OSD— MODE—CURRENT/START—WIN for details on setting Win mode to boot. See OSD—MODE —CURRENT/START—TEST PATTERN for details on setting a test pattern to boot.

5.3 PiP

Use this section to define the current mode in which the device should run.

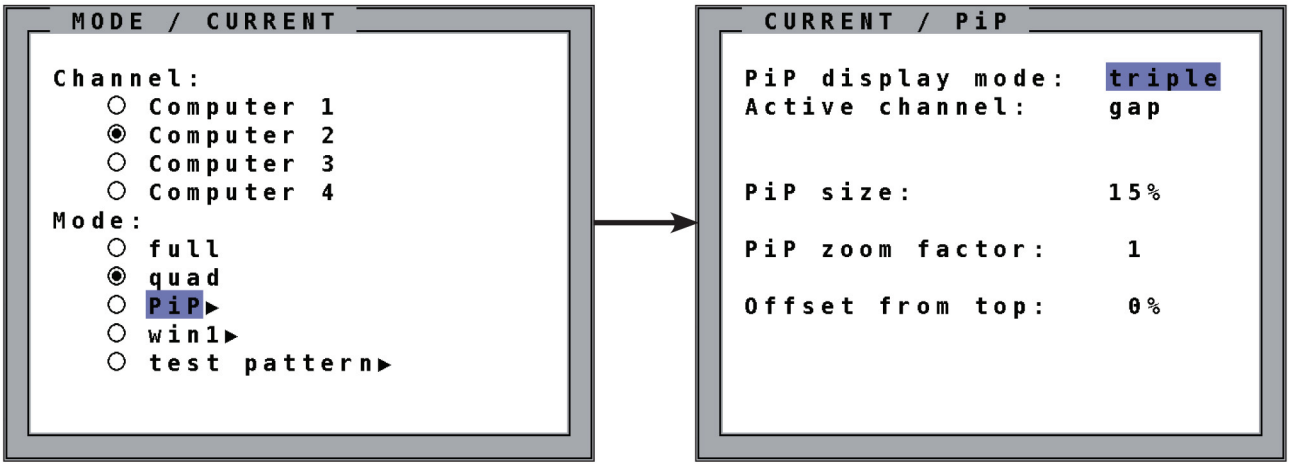


Figure 5-3. Mode> Current>PiP screen.

In the PIP window you can configure PiP size, position, and display mode.

PiP display mode

Select the option TRIPLE to show three additional screens in PiP Mode. Select SINGLE to display only one other screen. If SINGLE is selected, use the option PiP CHANNEL to define which channel should appear in the single window.

See the section Display Modes for details.

PiP size

Adjust the size of PiP images to your requirements. 12 (single-mode) or 9 (triple-mode) different sizes are available:

Single: 3% - 5% - 7% - 10% - 15% - 20% - 25% - 28% - 33% - 38% - 44% - 50%

Triple: 3% - 5% - 7% - 10% - 15% - 20% - 25% - 28% - 33%

50% equals the size of one quad screen (one quarter of a full-size screen).

PIP zoom factor

Use this option to zoom the center of the PiP images by a factor of 2.

Offset from top

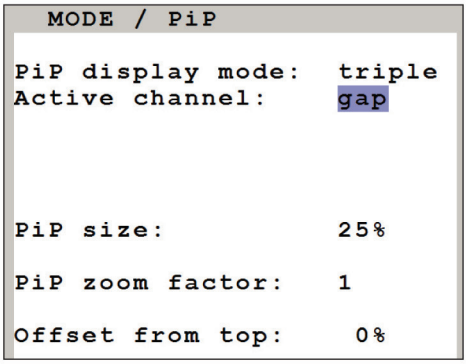
Use this option to change the position of PiP images. PiP images can be moved vertically to any position on the screen's right-hand margin.

NOTE: All settings also possible via Hotmouse Menu.

PIP display modes

ServSwitch 4site Flex offers the following PiP modes:

PIP display mode triple: All other video sources are displayed (three PiP images)



Triple gap:

PiP images are displayed with a gap in place of the active channel.

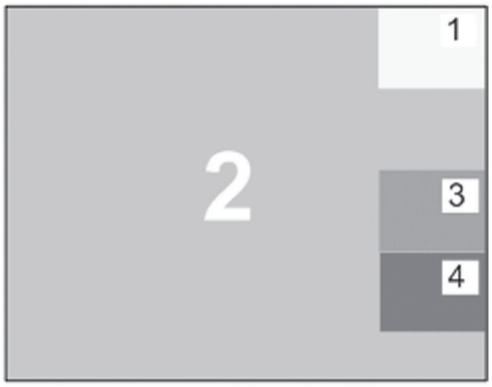
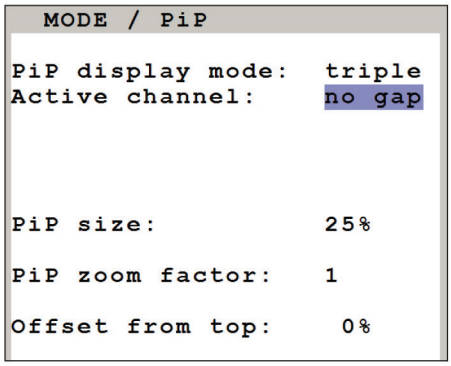


Figure 5-4. Triple gap.



Triple no gap:

PiP images are displayed without a gap.

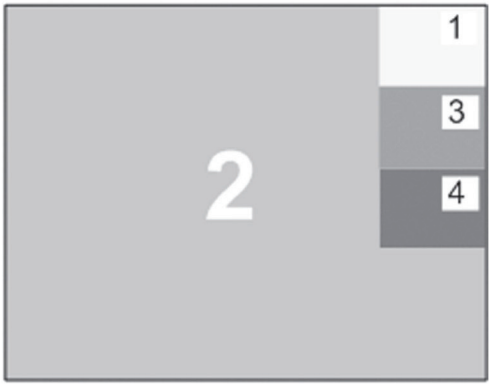
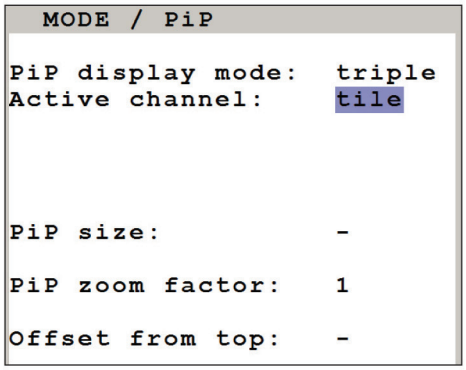


Figure 5-5. Triple no gap.



Triple tile:

The size of the main image and the PiP images is optimized so that the main image and the PiP images are shown as large as possible without overlapping.

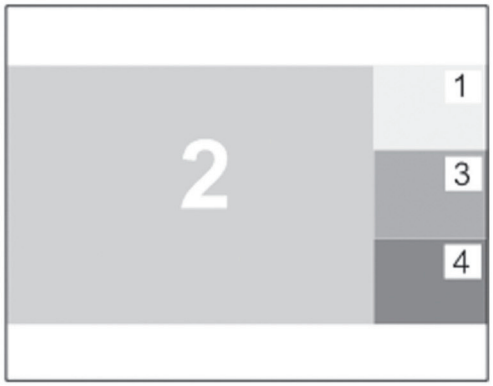


Figure 5-6. Triple tile.

PiP display mode single:

One PiP image is displayed. You can choose between different display modes.

Figure 5-7. PiP display mode single.

Single fixed:

One channel is selected to be displayed as permanent PiP image. Only the active channel (full image) can be switched. Press front-panel buttons 1, 2, 3, or 4 to switch the full image.

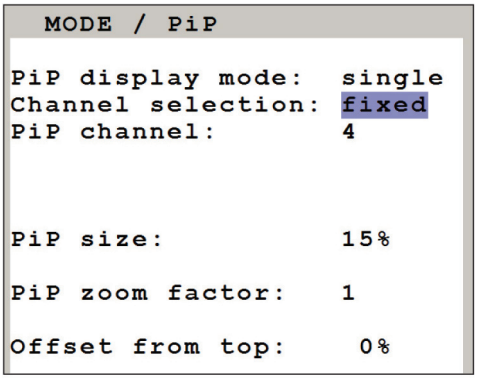


Figure 5-8. Single fixed mode.

Single direct:

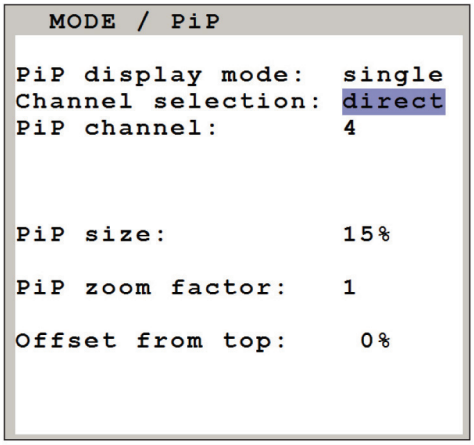


Figure 5-9. Single direct mode.

One channel is selected to be displayed as permanent full image (active channel).

Only the PiP can be switched. Press front-panel buttons 1, 2, 3, or 4 to switch the full image.

Single scan:

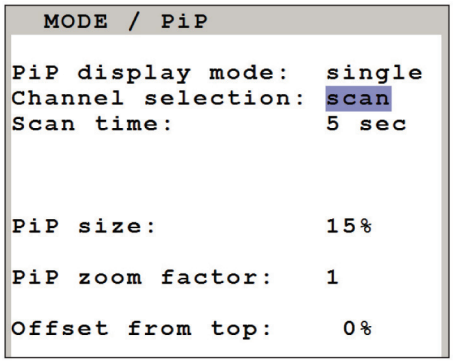


Figure 5-10. Single scan mode.

Within a PiP image, when the three other video sources are displayed one after the other, the delay can be set to between one and nine seconds.

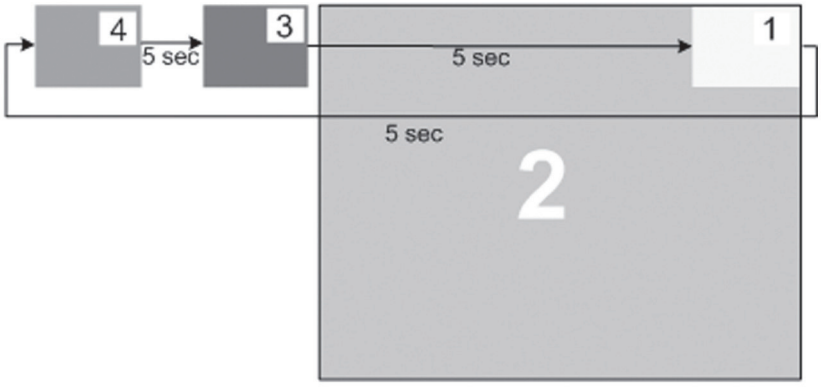


Figure 5-11. PiP video sources displayed one after the other.

5.4 Win Mode

Navigate with the arrow keys in the MODE menu to the entry WIN.

Press ENTER/SELECT to open the WIN MODE window.

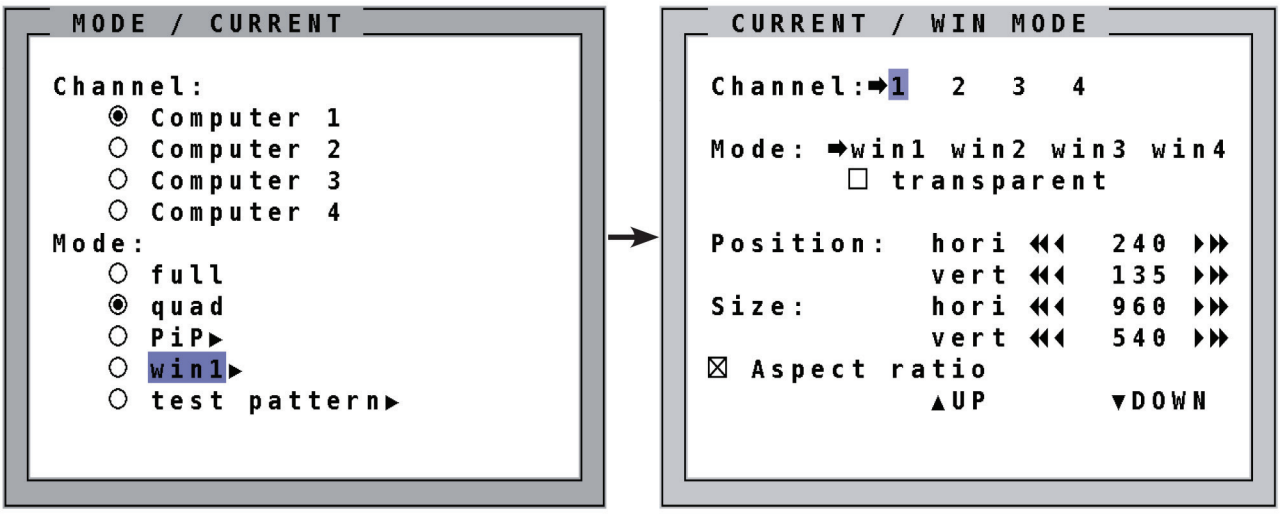


Figure 5-12. Current mode>WIN mode screen.

Select the channel, window mode, position, and window size in the window WIN MODE.

The arrows can be used to select the horizontal or vertical position or size of the windows.

Activate the checkbox ASPECT RATIO to retain the aspect of the video source.

5.5 Test Pattern

Navigate with the arrow keys in the MODE menu to the entry TEST PATTERN.

Press ENTER/SELECT to open the TEST PATTERN window.

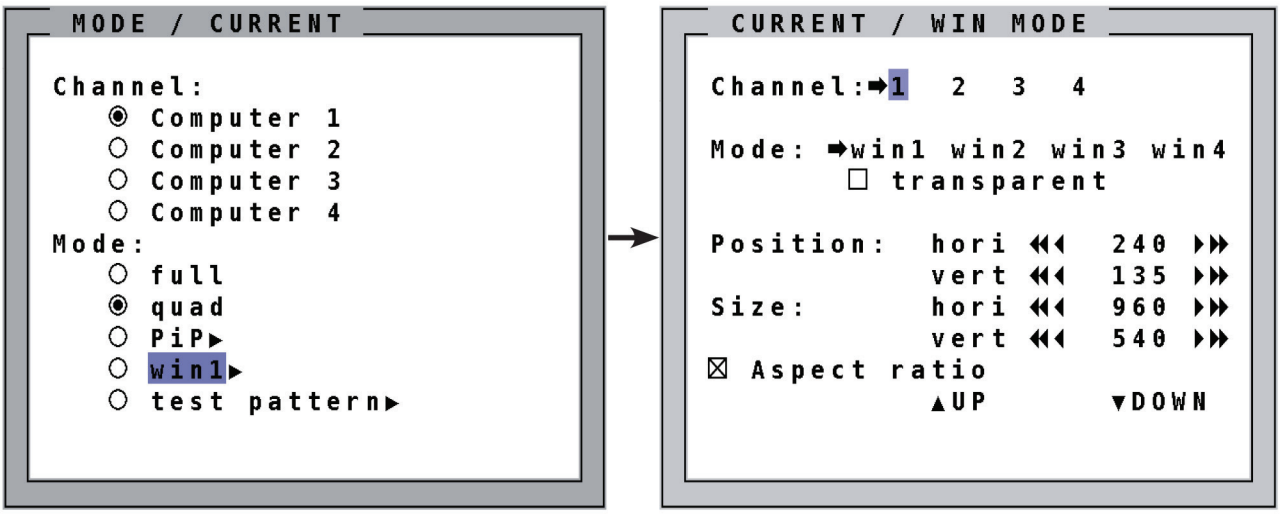


Figure 5-13. Current mode>Test pattern.

Use the Test Pattern feature to check monitor quality (pixel errors, contrast, changes etc) or the functionality of the video output of the ServSwitch 4site Flex.

We recommend that you use all available test patterns for the test procedure.

To exit TEST PATTERN mode, use the OSD, the front-panel buttons (Full, Quad, PiP or Win), or hotkey commands accordingly.

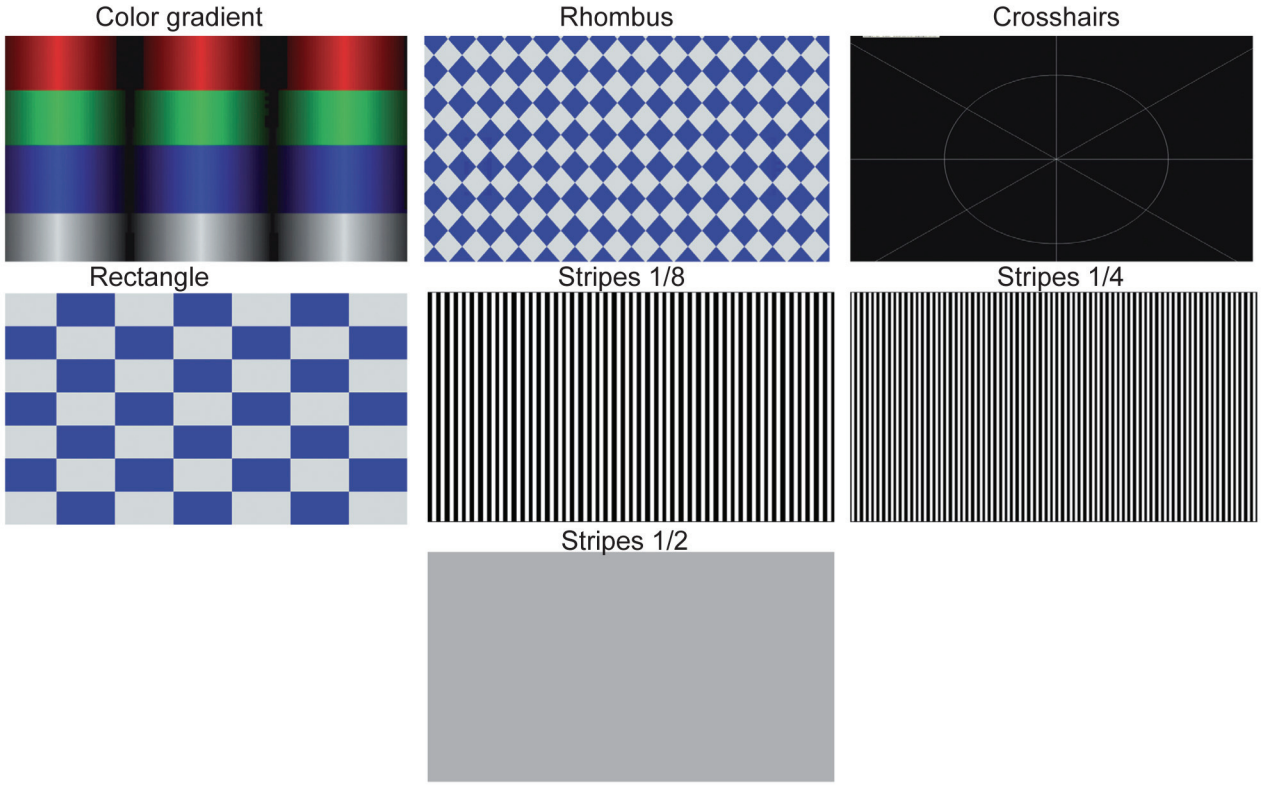


Figure 5-14. Test patterns.

6. OSD Configuration

6.1 Backup

Navigate with the arrow keys in the CONFIGURATION menu to the entry BACKUP.

Press ENTER/SELECT to open the BACKUP window.

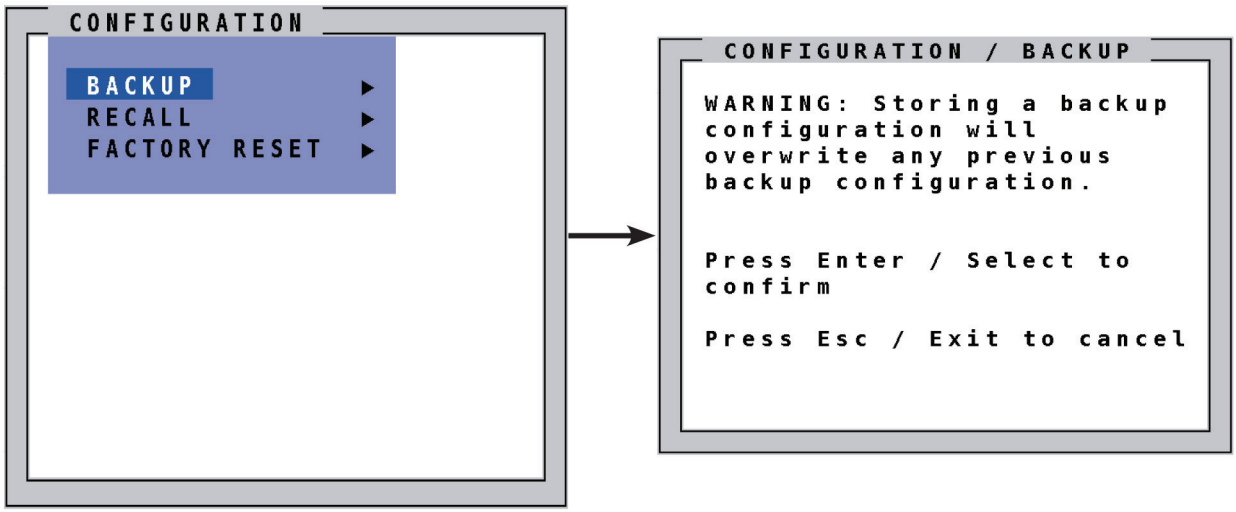


Figure 6-1. Configuration>Backup screen.

This function saves the current device settings, including the start mode set in MODE START. Additionally, EDID data from the 4 inputs is also saved.

For details on creating an external backup to a file, see the section "Device Configuration Program."

6.2 Recall

CONFIGURATION menu to the entry RECALL

Press ENTER/SELECT to open the RECALL window.

Use this feature to replace the current settings with the last configuration saved using the BACKUP command.

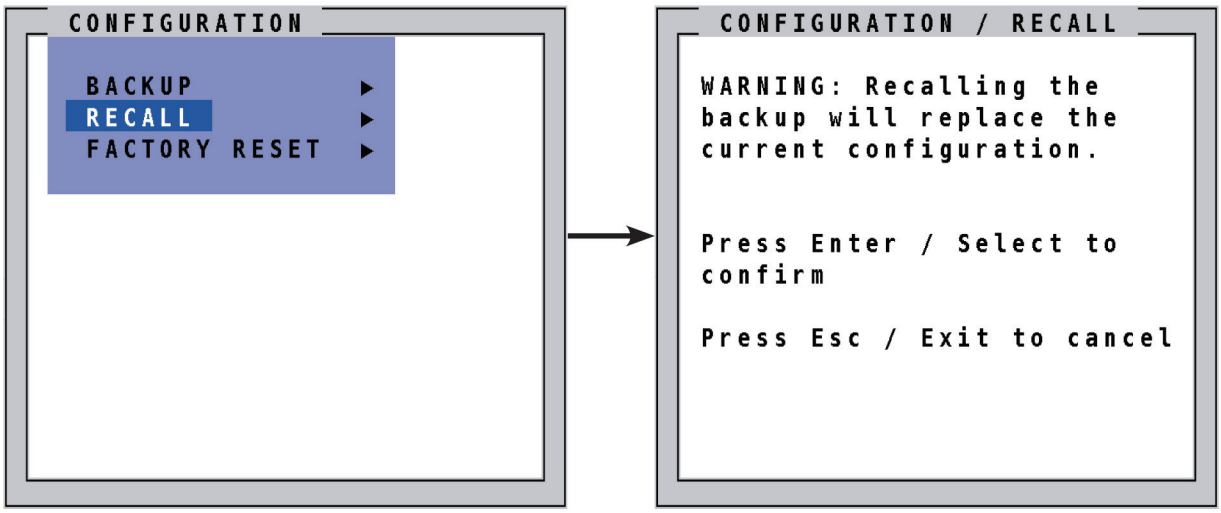


Figure 6-2. Configuration>Recall screen.

6.3 Factory Reset/Defaults

Navigate with the arrow keys in the CONFIGURATION menu to the Factory Reset

Press ENTER/SELECT to open the DEFAULTS window.

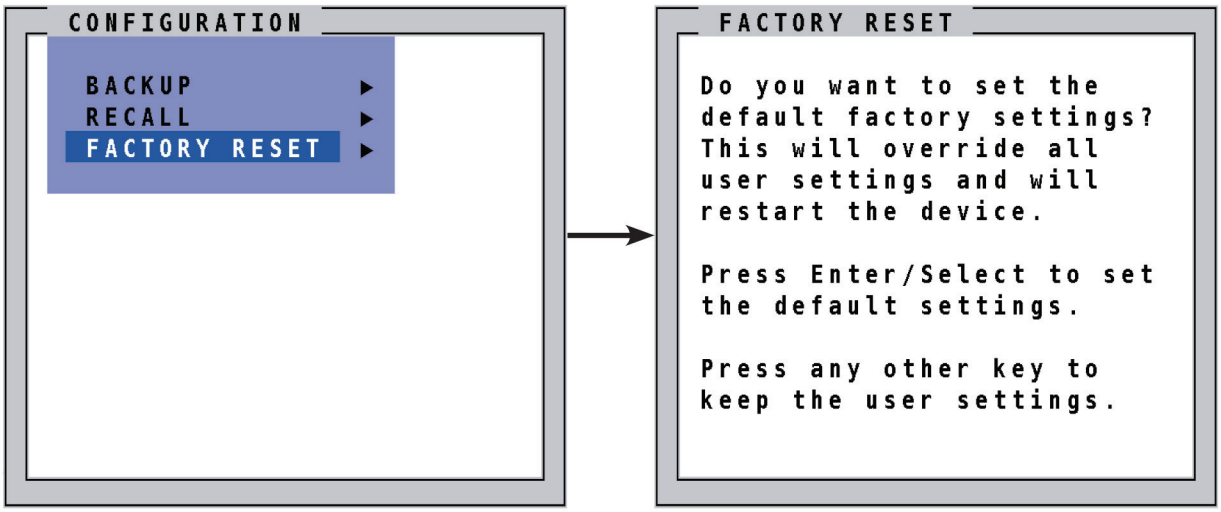


Figure 6-3. Configuration>Factory Reset screen.

Use this function to reset the current settings of ServSwitch 4site Flex to the factory default configuration. All four input EDIDs are also reset to their default values.

If necessary, save your current settings before using the DEFAULTS command. Execution of this command results in a complete reset and reboot of ServSwitch 4site Flex with factory defaults.

FACTORY DEFAULTS:

SYSTEM	HOTKEY	= Multiple Hotkey / Hotkey = Ctrl + Alt
	HOTMOUSE	= ON / Hotmouse timeout = 5 sec.
	QUAD MODE	= Channel selection timeout = 5 sec.
	WIN MODE	= Border width = 0 sec. Active channel= 255,255,0 Active channel= 255,136,0
	OSD POSITION	= centered
	OSD LANGUAGE	= English
	SECURITY	= None (security level = 0)
	DISABLE CHANNEL	= All four channels are active
	CONTROL	= Off
MODE	CURRENT	= Active channel = 1, quad
	START	= Active channel = 1, quad
	> PIP Size	= 15 % Zoom factor = 1 Display mode = triple Active channel = gap; Offset from top = 0 %
	>WIN	= Channel: 1, Mode:win1, Position settings depend on the source, Aspect ratio: enabled

FACTORY DEFAULTS (Continued):

CONSOLE		
	KEYBOARD	= English
	TOUCH SCREEN	= Mouse emulate right click /
	FADE	= Off
	MULTI MONITOR	= Monitor 1 --> Channel 1; Monitor 2 --> Channel2; Monitor 3 --> Channel 3; Monitor 4 --> Channel4;
	BACKGROUND	= Color / 0,0,0
VIDEO	DVI/VGA	= DVI/VGA (all channels)
	ROTATION	= 0
	CROPPING	= no cropping
	BRIGHTNESS	= +0 (all channels)
	CONTRAST	= 56 % (all channels)
	HORIZ POSITION	= auto (all channels)
	VERT POSITION	= auto (all channels)
	SCREEN WIDTH	= +0 (screen-width correction of all channels)
	PHASE	= +0 (all channels)
	FORMAT Fit to screen	= No (all channels)
COMPUTER	CHANNEL MAPPING	= Positioning = relative (all channels)
	AUDIO	= Enable audio output/Select active channel/ Switch channel on audio activity = off
	NAME 1-4	= Computer 1-4 respectively
	KEYBOARD	= USB
	MOUSE	= positioning realtive
	RESET PS/2	= Channel 1 selected
	EDID / DDC	1600x1200@60, 1920x1200@60, digital
USB DEVICE 1–4		= Off / manual switching w. warning / name: Device 1 (-4)

7. OSD Console

7.1 Video Output

Navigate with the arrow keys in the CONSOLE menu to the entry VIDEO OUTPUT.

Press ENTER/SELECT to open the VIDEO OUTPUT window.

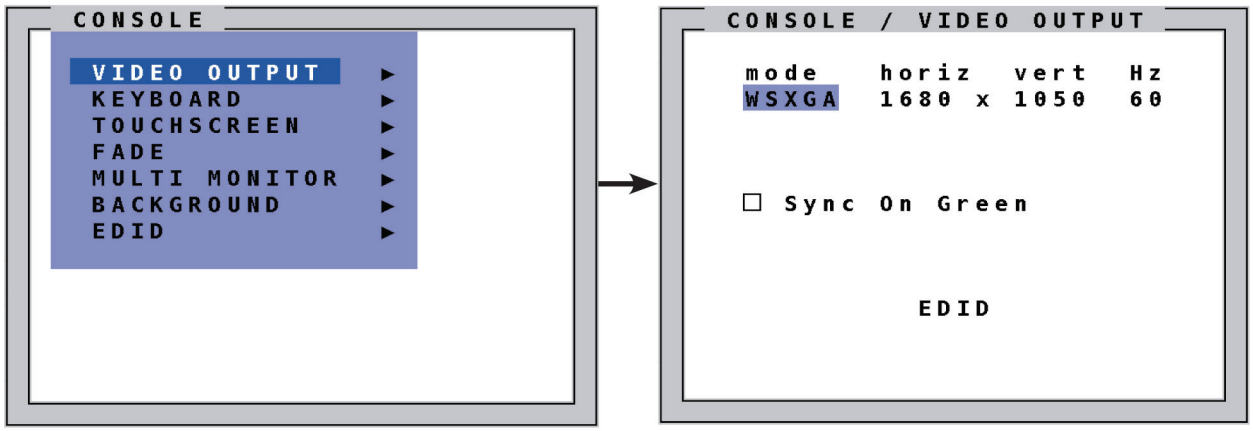


Figure 7-1. Console>Video Output screen.

Use the VIDEO OUTPUT menu to choose an output resolution supported by your monitor.

Press ENTER/SELECT to enter the selection menu.

Use arrow keys to select the desired line in the list shown on the right and press ENTER/SELECT for the new video format.

The new output mode is visible for 10 seconds.

Within this time you can either accept the new setting by pressing ENTER/SELECT or return to your original setting by pressing ESC/EXIT.

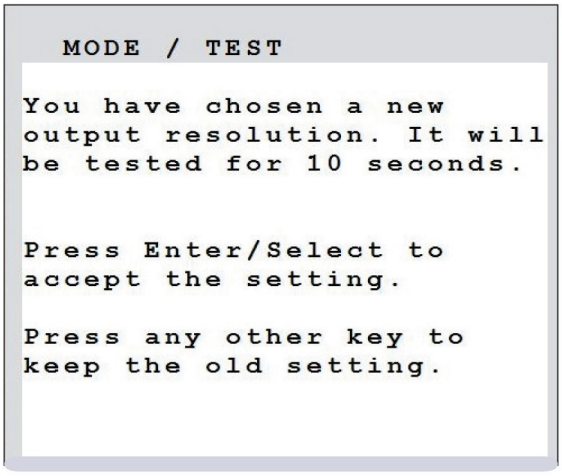


Figure 7-2. Mode/Test screen.

When the output mode is set to "auto," the ServSwitch 4site Flex chooses a resolution by reading the connected monitor's EDID data. Choose the EDID menu item to check whether the connected monitor provides this data.

If the monitor does not offer this data, the ServSwitch 4site Flex sets VGA mode (640x480@60Hz) as the default and activates Sync on Green.

Sync on Green can be deactivated on the ServSwitch 4site Flex.

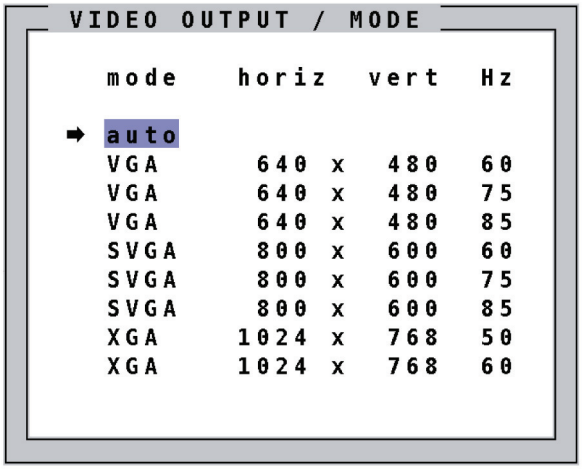


Figure 7-3. Video Output/Mode screen.

7.2 Keyboard

Navigate with the arrow keys in the CONSOLE menu to the entry KEYBOARD.

Press ENTER/SELECT to open the KEYBOARD window.

Set the keyboard layout to the desired language, English, Deutsch (German), Español (Spanish), Français (French), Italiano (Italian) or Japanese.

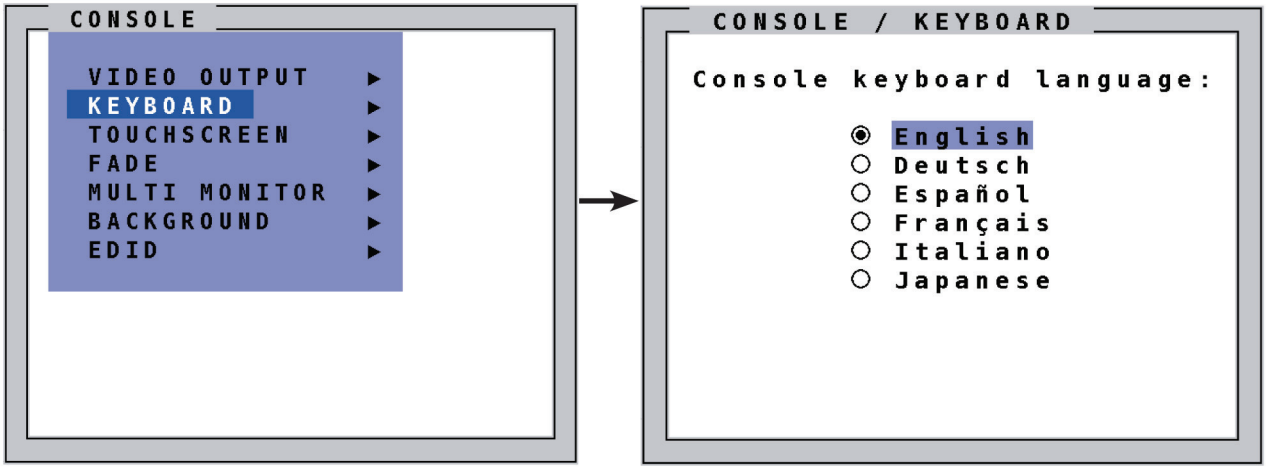


Figure 7-4. Console>Keyboard screen.

7.3 Touchscreen

ServSwitch 4site Flex enables the user to use a touchscreen to control and switch between four computers as well as change display modes.

ServSwitch 4site Flex supports a great number of USB touchscreens with commonly integrated touch controllers. For a list of supported touchscreens, see Appendix F.

To control ServSwitch 4site Flex using a touchscreen, connect the touchscreen to the ServSwitch 4site Flex by connecting the VGA or DVI cable from the ServSwitch 4site Flex monitor port to the input of the touchscreen. Connect the USB port of the touchscreen to the ServSwitch 4site Flex console USB port. Please see Chapter 2 for a description of the ServSwitch 4site Flex ports.

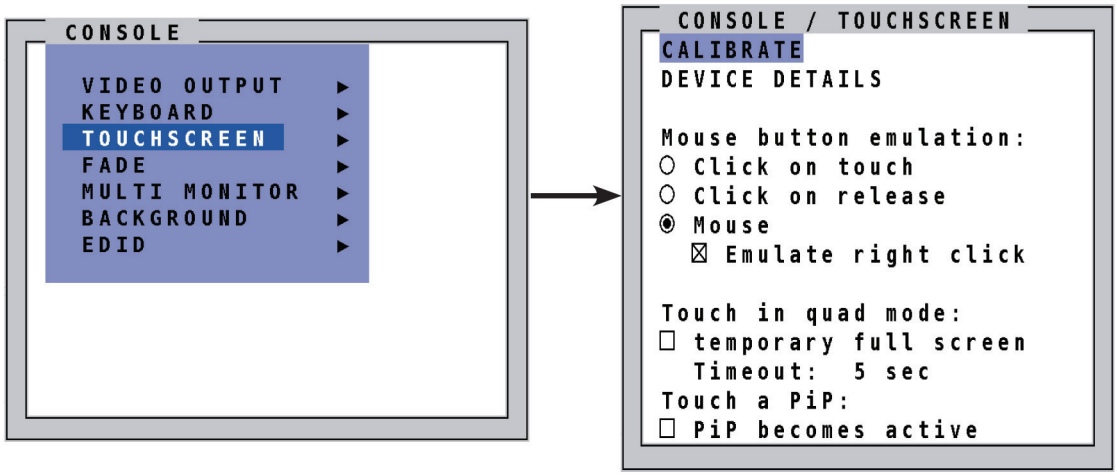


Figure 7-5. Console>touchscreen window.

Calibration

After connecting a touchscreen to the ServSwitch 4site Flex for the first time, calibrate the touchscreen.

Open CONSOLE > TOUCHSCREEN menu, choose CALIBRATE, and press ENTER/SELECT.

Four markers will be displayed in the corners of the touchscreen.

The diagram shows the first marker in the top left corner of the screen.

Touching the center of the markers as accurately as possible yields the best calibration results.

Then repeat for the other three markers to complete calibration.

Device Details

Select this option to display touchscreen information such as the manufacturer ID and product ID.

Figure 7-6. Device details screen.

Mouse button emulation

ServSwitch 4site Flex offers three modes of interpreting the user input as mouse clicks:

1. Mouse: When touching the touchscreen, the mouse button is pressed. When the finger is released from the touchscreen, the mouse button is released. This mode can be used for drag and drop operations.
2. Click on touch: When touching the touchscreen, a mouse click is generated at the position of the touch.
3. Click on release: When the finger is released from the touchscreen, a mouse click is generated at the last position of the finger. By default, "mouse" is set as mode. You could use your finger on the touchscreen similar to the way you use your mouse. "Click on touch" and "click on release" are suited for kiosk applications or environments where touchscreens are used instead of keyboards and mice, such as in medical industries for hygienic reasons, in industrial production and automation for operation with gloves, or in vehicles and aircraft where robust components are required.

Touch in quad mode

Check this box to switch a quadrant from Quad mode temporarily to full screen when touching the quadrant. This activates the keyboard and mouse of that quadrant and allows the computer that was operating in quad mode to operate in full-screen mode temporarily. The other sources are not visible during this time. After a timeout of 5 seconds without keyboard/mouse activity, ServSwitch 4site Flex automatically switches back to Quad mode. The timeout can be set to values between 1 and 10 seconds.

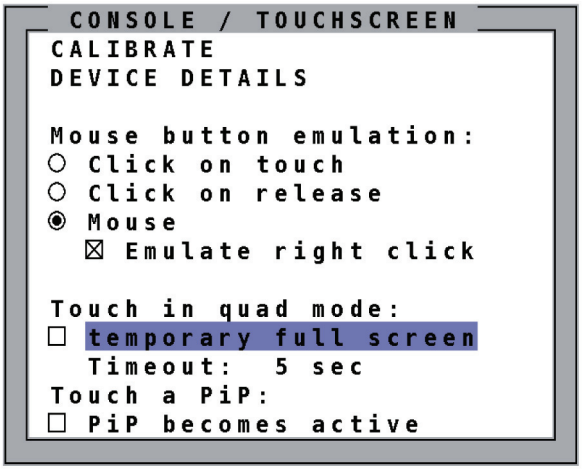


Figure 7-7. Console>Touchscreen window, temporary full screen selected.

Touch a PiP

Check this box to activate keyboard and mouse on a computer shown as PiP. When touching a PiP, keyboard and mouse become active in this PiP. This activated channel now remains a little PiP and does not switch to full image. In this PiP, you can operate the computer with keyboard and mouse.

When unchecked (by default), a PiP is switched to full image as soon as it is touched. The full image gets exchanged with the other sources remaining visible as PiPs.

Right mouse button

Press and hold your finger on the touchscreen to emulate the right mouse button. This only works in "mouse" emulation mode, not in "click on touch" or "click on release" mode. By default "Emulate right click" is set to perform a right mouse click. Some touch controller models do not support right mouse click. Using touchscreens with such controllers requires unchecking the box "Emulate right click."

Hotmouse and Hotmouse menu

To open the Hotmouse Menu, tap the screen twice, and leave your finger pressed on the touchscreen after the second tap (tap–hold, like a double click without lifting the finger on the second click), until the Hotmouse Menu opens.

By clicking outside the Hotmouse Menu, you can open the Hotmouse Cursor to enlarge and reposition PiPs in PiP mode, resize and move windows in Win mode, and switch channels (see description of the Hotmouse function).

After you are finished using the Hotmouse Cursor, the Hotmouse Menu will reopen.

Mouse positions

Absolute mouse position

ServSwitch 4site Flex works best with touchscreens when using absolute mouse positioning mode with the connected computers. To enable absolute mouse positioning mode, use the menu COMPUTER > MOUSE in the OSD.

This mode works when a computer is connected via USB, and with most modern operating systems.

Relative mouse position

When using relative mouse positioning, please check the configuration of the computers connected to ensure that mouse acceleration is switched off and mouse scaling is set to 1:1.

Resetting the mouse position: When using relative positioning mode, the actual position of the mouse cursor and the position of your finger on the touchscreen may not match in certain cases when a computer switches resolution or changes the mouse position (e.g. when the system is configured to place the mouse pointer over the "OK" button of a window). In these cases, to reset the mouse position, either switch to a different channel, and back again, or tap the touchscreen three times, and leave your finger pressed on the touchscreen after the third tap (tap–tap–tap + hold), until the mouse cursor moves to the top left corner of the screen.

7.4 Fade

Use arrow keys to navigate in the CONSOLE menu to the entry FADE and press ENTER/SELECT to open the FADE window.

Fade through black is an elegant visual effect for presentations: When switching channels or display modes, the previous image fades to black, and the next image is faded in smoothly.

To enable fade through black, select the transition speed under "Smooth transitions." The "Speed" setting controls the speed of the transition, with 1 being the slowest and 3 the fastest transition.

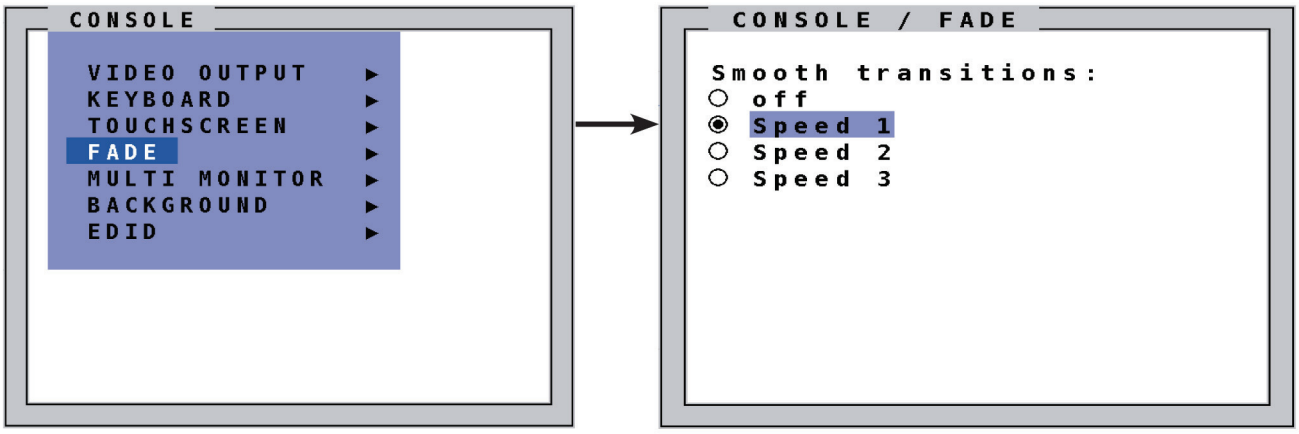


Figure 7-8. Console>Fade screen.

7.5 Multi Monitor

Use arrow keys to navigate in the CONSOLE menu to the entry MULTI MONITOR and press ENTER/SELECT to open the MULTI MONITOR window.

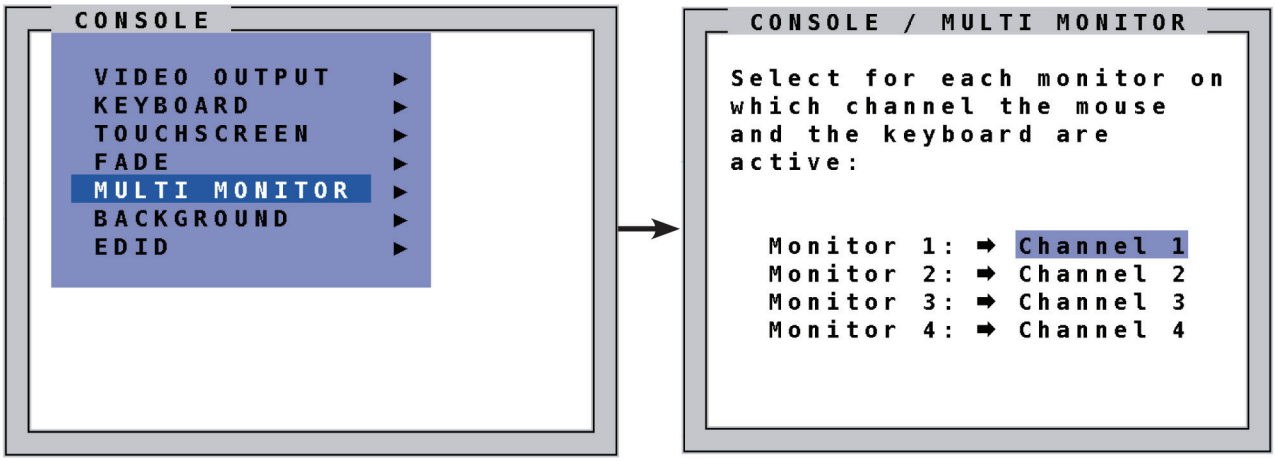


Figure 7-9. Console>Multi Monitor screen.

Multi Monitor is used if computers with multiple video outputs are connected to the ServSwitch 4site Flex but only one keyboard and mouse are operating the computer. If you use graphics cards with multiple video outputs, you must assign the computer's mouse and keyboard to the corresponding video output (Channels 1–4).

Example:

If a computer with quad-head graphics card is connected to ServSwitch 4site Flex, and the keyboard and mouse are connected to Channel 1, you must assign console "Channel 1" to all video channels ("Monitor 1–4").

7.6 Background

Use arrow keys to navigate in the CONSOLE menu to the entry BACKGROUND and press ENTER/SELECT to open the BACKGROUND window.

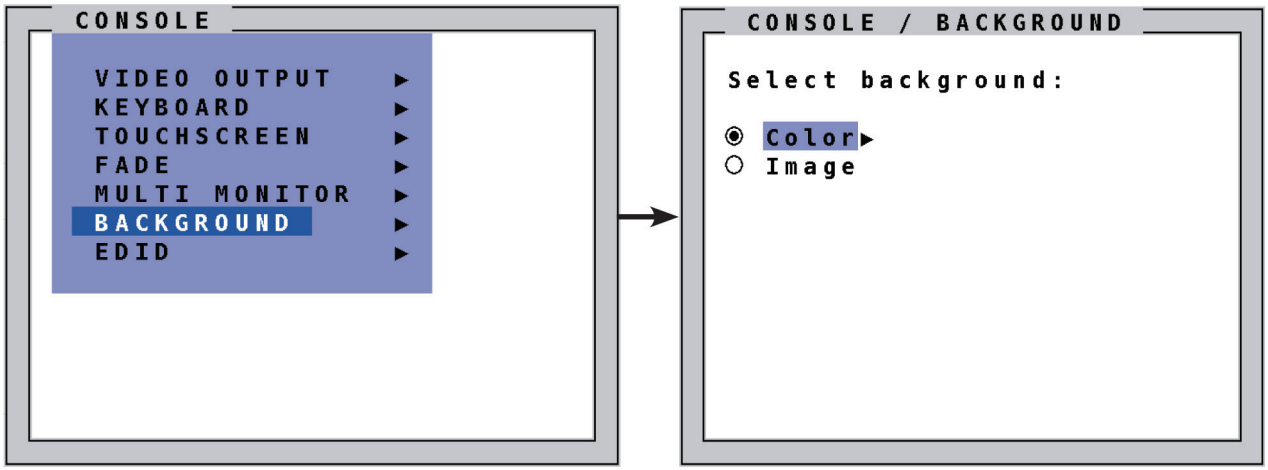


Figure 7-10. Console>Background screen.

Use the window BACKGROUND to select either a solid color or an image for the background area of the screen on which windows are displayed.

NOTE: The background is shown only in Win mode. The default color for the other modes is black.

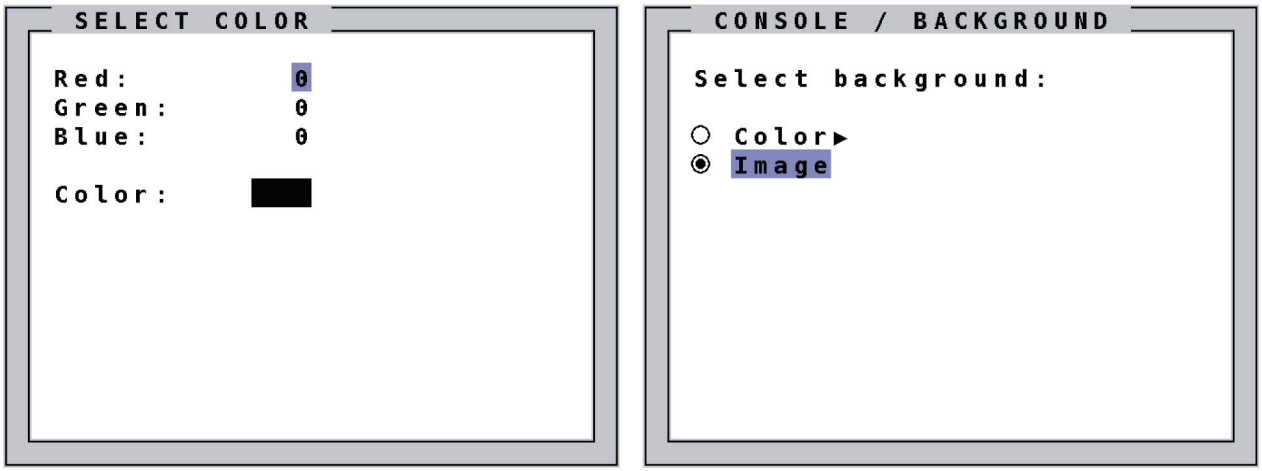


Figure 7-11. Select Color>Console>Background>Image selected.

Use BACKGROUND > COLOR to set the color of the background. Enter the desired color in 24-bit color red, green, and blue values. A preview of the color will appear in the field COLOR.

After selecting BACKGROUND > IMAGE, the background area of the screen will be filled with the image that has been previously selected in the utility ConfDev under DEVICE > LOAD BACKGROUND IMAGE. If no image has been loaded, this option will not appear.

7.7 EDID (Display of Monitor Data)

Use arrow keys to navigate in the CONSOLE menu to the entry EDID and press ENTER/SELECT to open the EDID window.

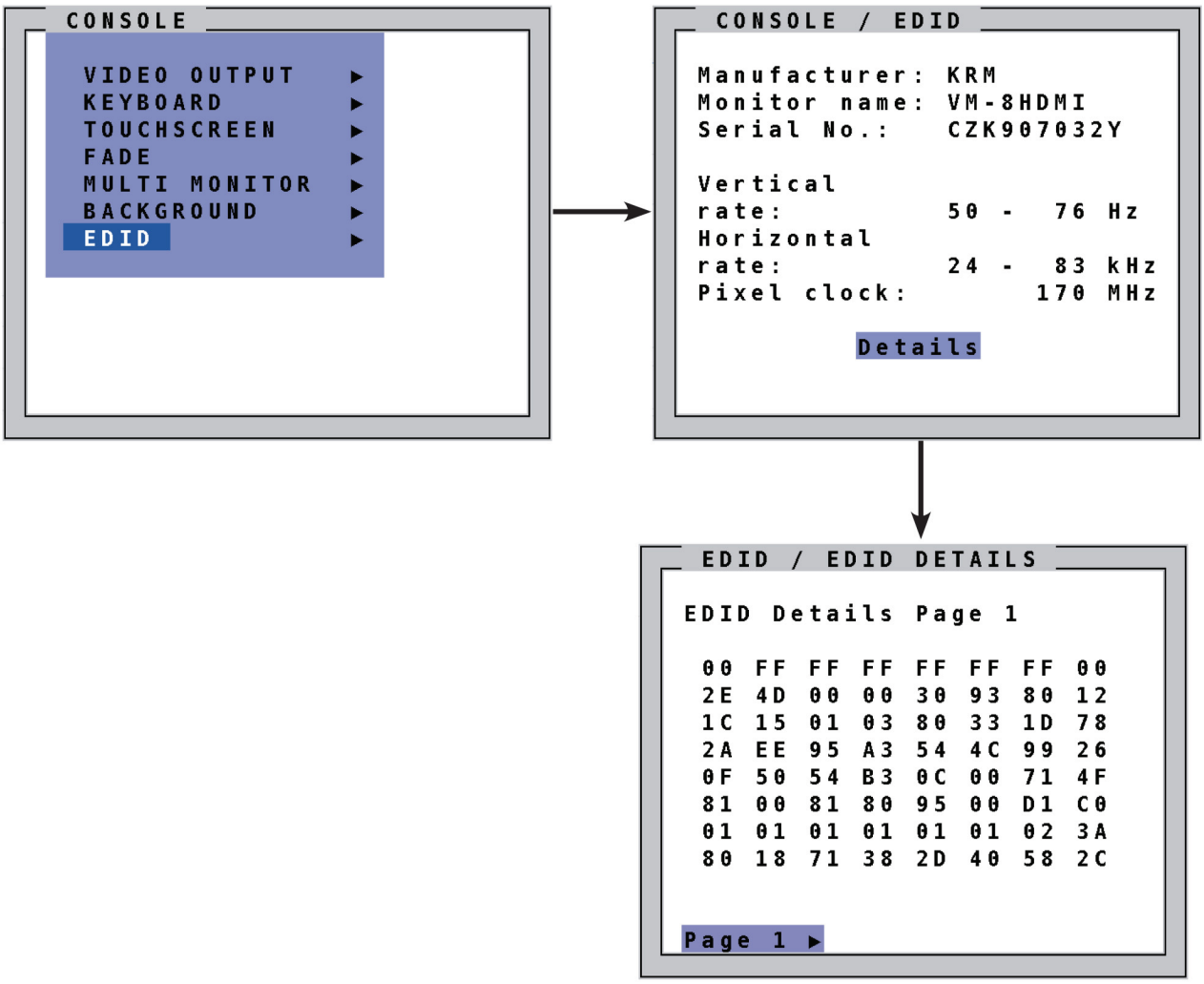


Figure 7-12. Console>EDID>EDID Details screen.

Use the EDID command to read and display monitor data (manufacturer, monitor name, serial number, etc.) from the monitor's EDID memory. If VIDEO OUTPUT is set to "auto," the ServSwitch 4site Flex uses the optimum output resolution offered by the EDID.

EDID (Extended Display Identification Data) is a VESA standard data format that contains basic information about a monitor and its capabilities. This information is stored in the monitor by the manufacturer and can be read by ServSwitch 4site Flex or graphics card via a monitor cable's Display Data Channel (DCC) interface.

NOTE: EDID information can be copied to the four inputs and is then available for the connected sources. See COMPUTER > EDID/DDC.

8. OSD Video

8.1 Input Status (Display Video Formats)

Use arrow keys to navigate in the VIDEO menu to the entry INPUT STATUS and press ENTER/SELECT to open the INPUT STATUS window.

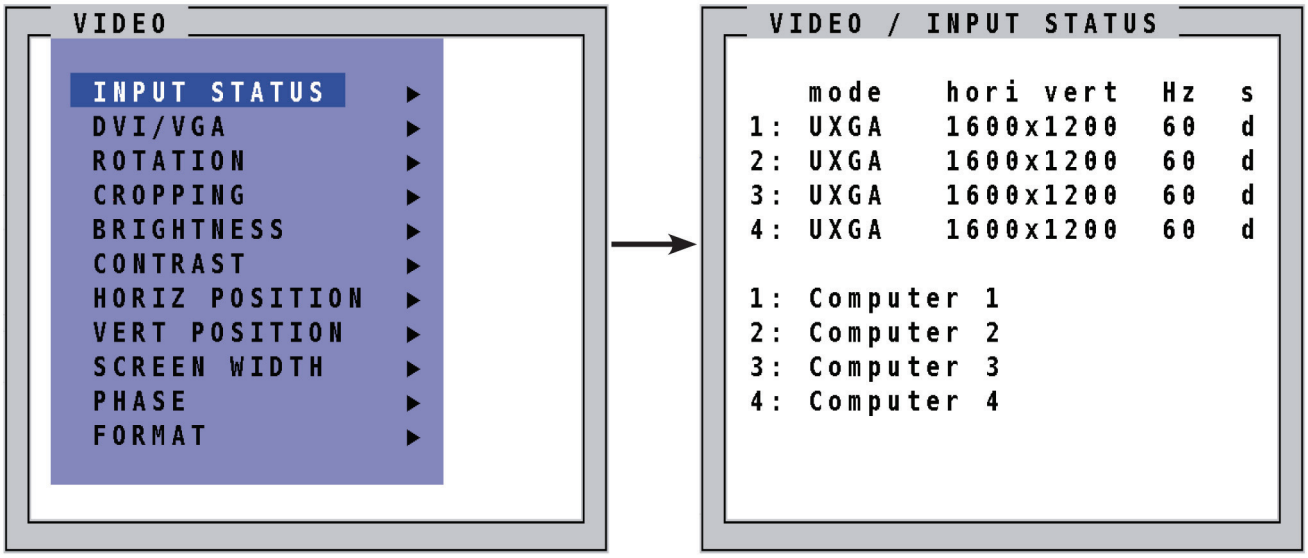


Figure 8-1. Video>Input Status screen.

Resolutions at the four video inputs are shown under INPUT STATUS. Resolution recognition at the four video inputs is automatic. Some analog input resolutions may not correctly be detected.

See Appendixes G and H for a list of video formats supported by ServSwitch 4site Flex.

S = Signal
a = analog
d = digital
g = sync on green
c = composite sync

8.2 DVI/VGA

Use arrow keys to navigate in the VIDEO menu to the entry DVI/VGA and press ENTER/SELECT to open the DVI/VGA window.

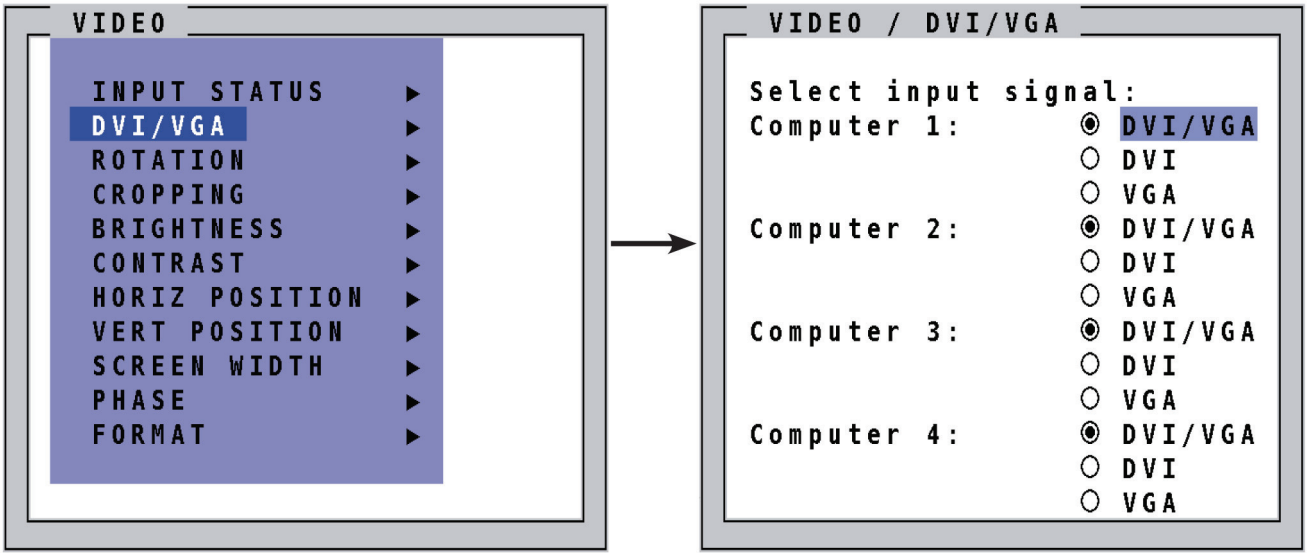


Figure 8-2. Video>DVI/VGA screen.

Go to "Select input signal" and define which video signal (VGA or DVI) is to be displayed. If the setting "DVI/VGA" is selected, ServSwitch 4site Flex will first check the digital input. If there is no signal at this input, the analog signal input will be checked.

This function can be used to connect, for example, 8 sources (4x VGA + 4x DVI) via Y-cables to ServSwitch 4site Flex.

8.3 Rotation

Use the arrow keys to navigate in the VIDEO menu to the entry ROTATION and press ENTER/SELECT to open the ROTATION window.

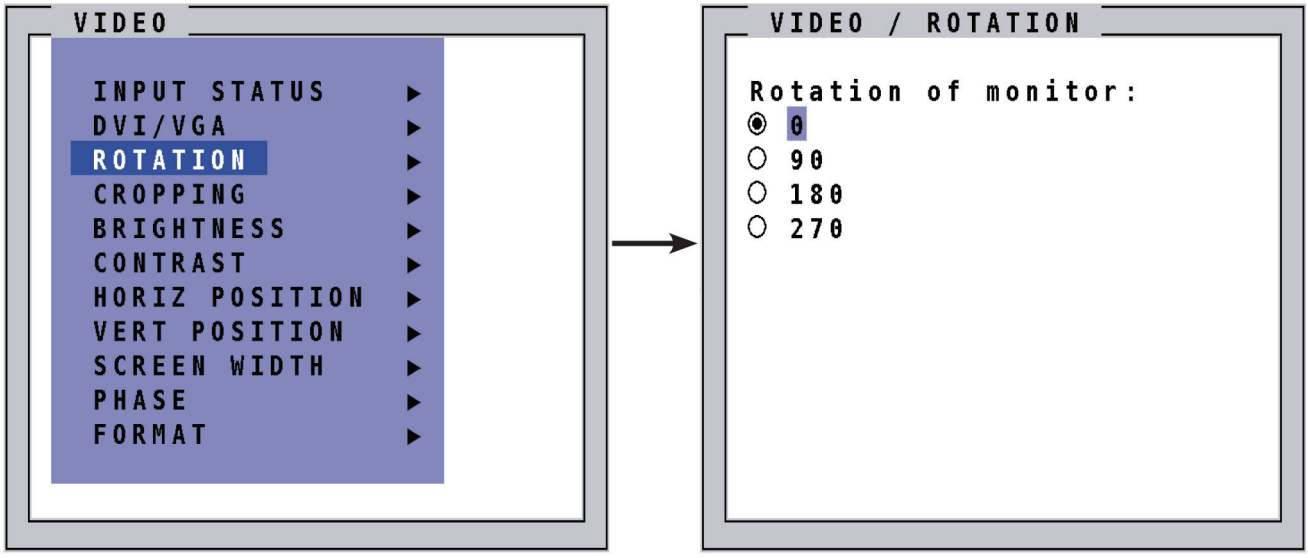


Figure 8-3. Video>Rotation screen.

Select the degrees to which you would like to rotate your display. Choose from 0, 90, 180, and 270. Once you select the rotation degrees, all the channels are rotated to the same degree.

NOTE: Once you choose the degrees, it may take a few seconds for the display to rotate.

Rotation limitation at 90° and 270°: If the channels overlap, the monitor display should have a total of lines no higher than 2028. If the aspect ratio is not locked in Win mode, you can't use both size reduction and enlargement simultaneously for each channel.

Example with 90-degree setting:

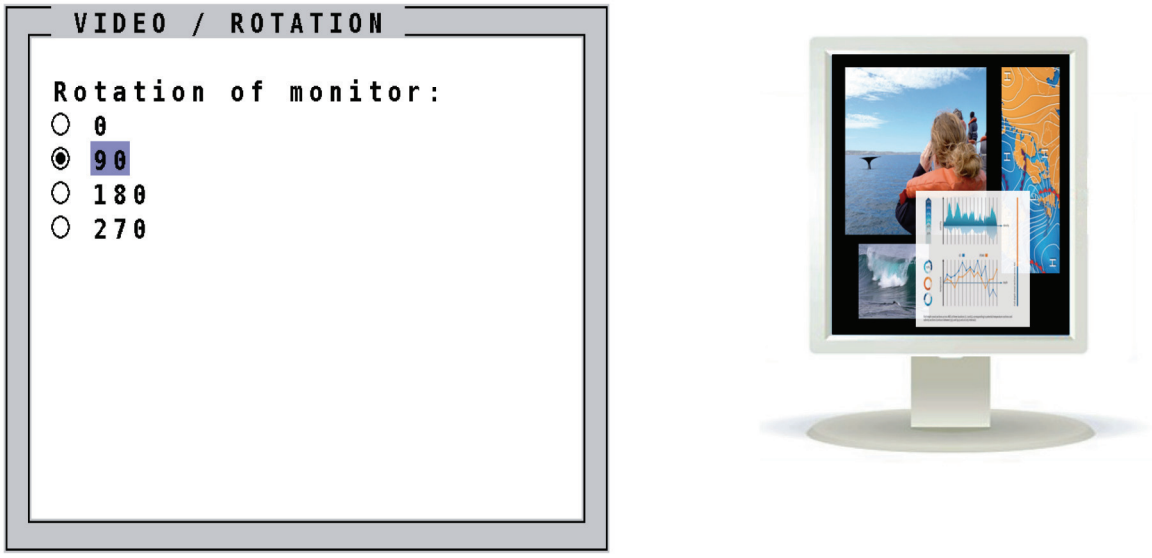


Figure 8-4. VIdeo/Rotation example.

8.4 Cropping

Use the arrow keys to navigate in the VIDEO menu to the entry CROPPING and press ENTER/SELECT to open the CROPPING window.

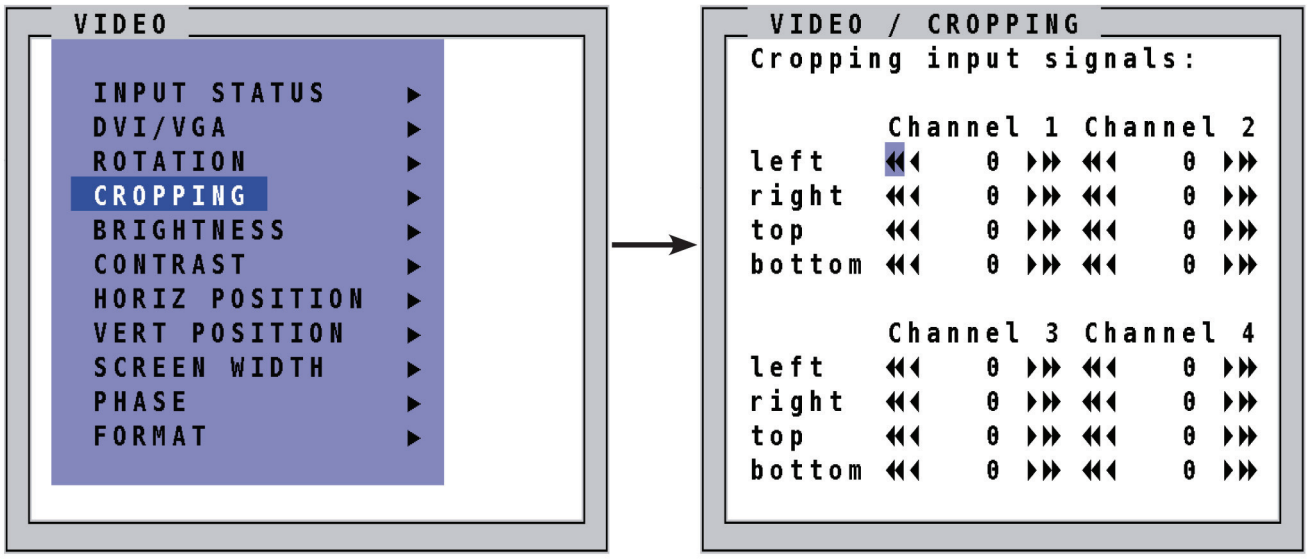


Figure 8-5. Video>Cropping screen.

In the CROPPING window, enter a value from 0–999 for the left, right, top, and bottom side of the channel to be cropped.

Use the arrows to increase or decrease the value either in single digits or in increments of 30. Alternatively, you can use the right and left arrows of the keyboard to adjust these values.

NOTE: The smallest possible size of each area is 10% of the input signal.

8.5 Brightness/Contrast (with Analog Input Only)

Use the arrow keys to navigate in the VIDEO menu to the entry BRIGHTNESS or CONTRAST and press ENTER/SELECT to open the BRIGHTNESS or CONTRAST windows.

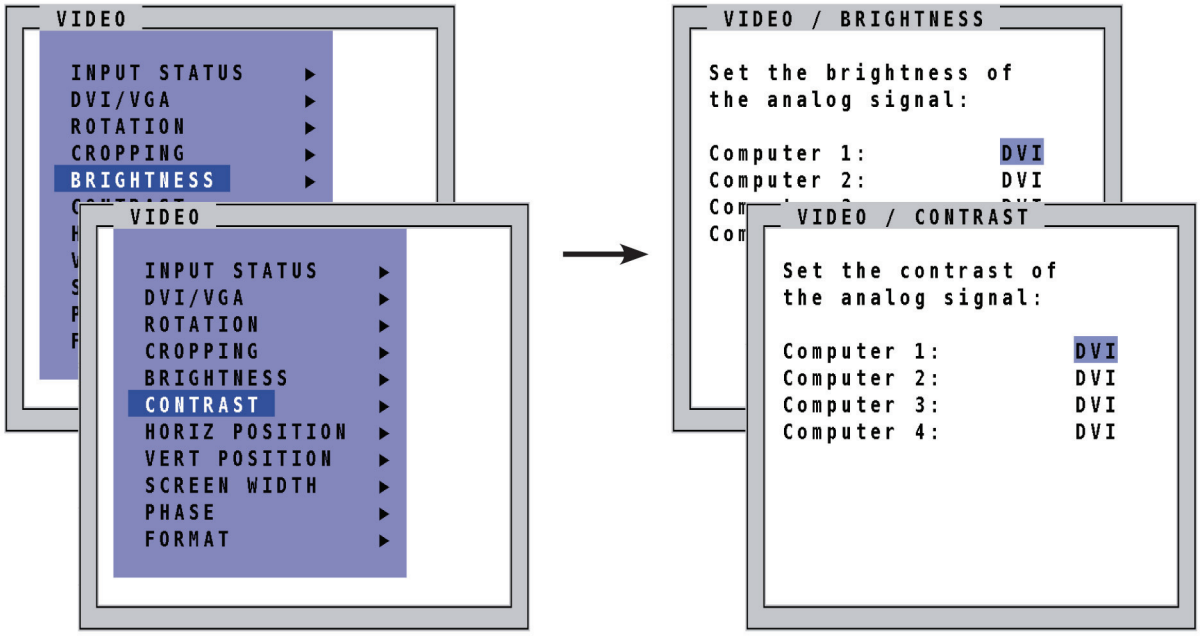


Figure 8-6. Video>Brightness/Contrast screens.

Use this feature to adjust the brightness or contrast of analog video input signals.

8.6 Horizontal/Vertical Position of Computer Screen) (with Analog Input Only)

Use the arrow keys to navigate in the VIDEO menu to the entry HORIZ POSITION or VERT POSITION and press ENTER/SELECT to open the HORIZ POSITION or VERT POSITION windows.

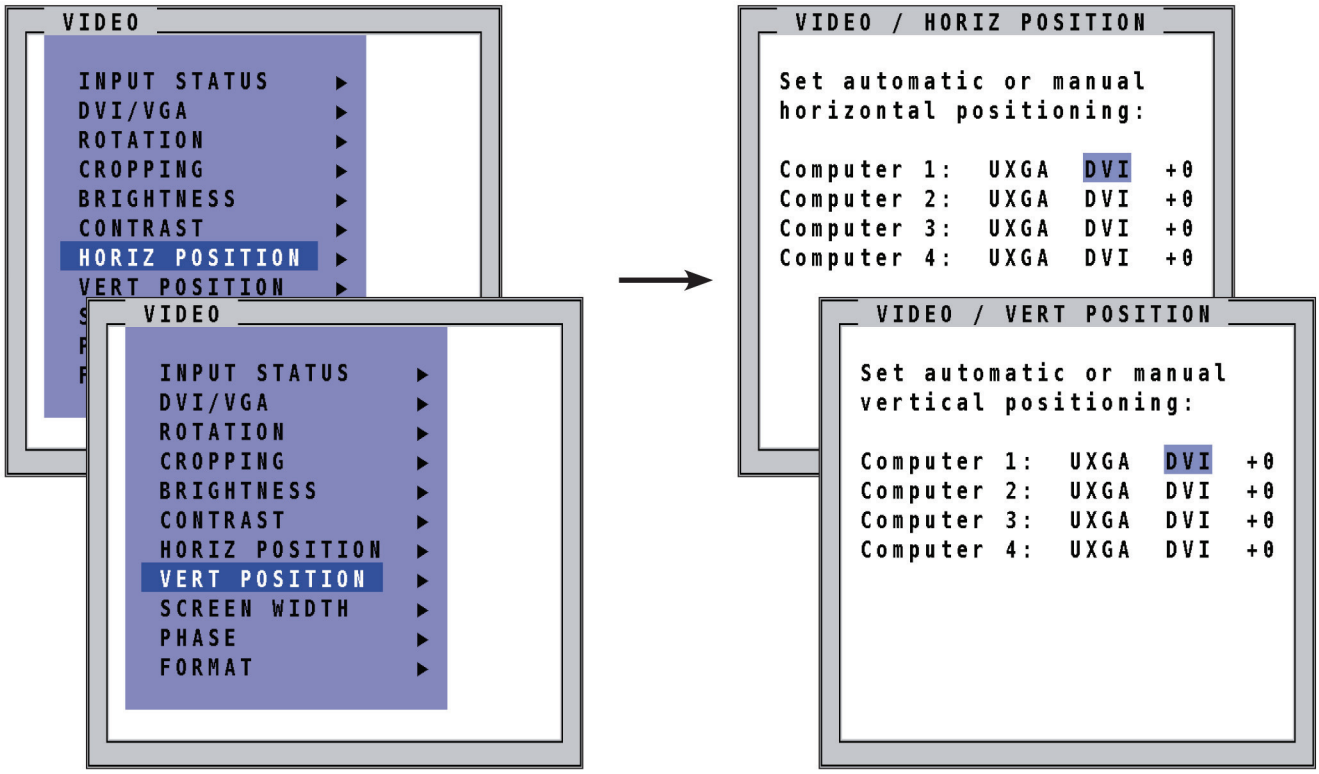


Figure 8-7. Video>Horizontal/Vertical Position screens.

In case the horizontal or vertical position of a computer screen is incorrect, use this feature to adjust the computer screen manually. Use the arrow keys to navigate to the AUTO/MAN field and set to MAN for manual. Use the "+" or "-" keys in the value field to adjust the horizontal position between –63 and +63 and the vertical position between –20 and +20.

8.7 Screen Width (with Analog Input Only)

Use the arrow keys to navigate in the VIDEO menu to the entry SCREEN WIDTH and press ENTER/SELECT to open the SCREEN WIDTH window.

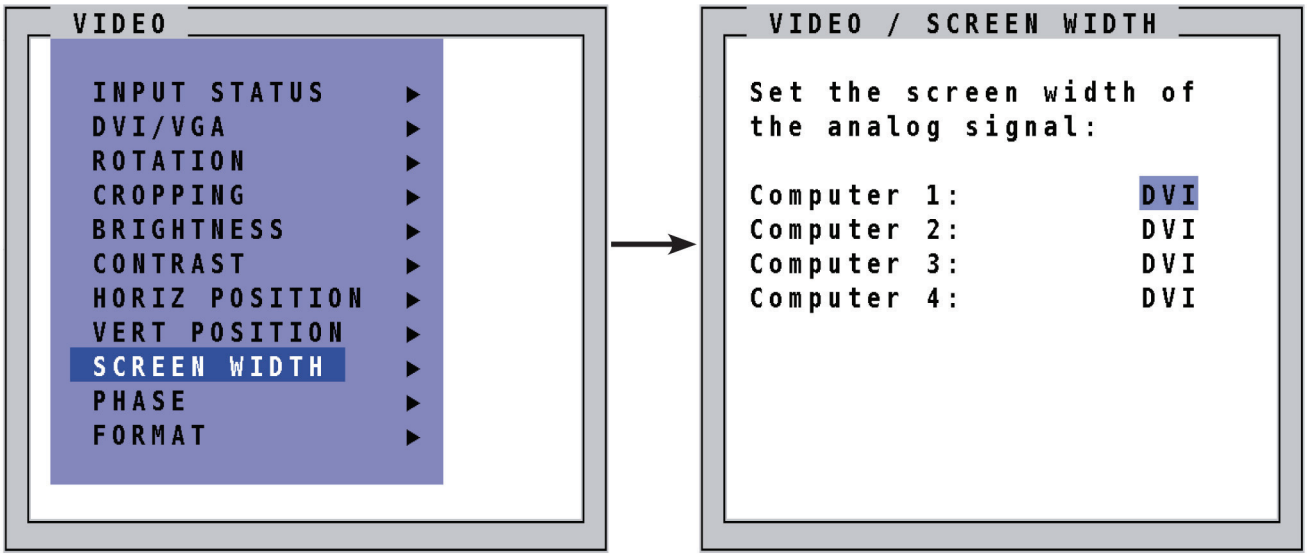


Figure 8-8. Video>Screen Width screen.

Normally, the screen width (number of horizontal pixels) is defined by the VESA standard. If the screen appears blurred, change this setting to improve screen quality.

8.8 Phase (with Analog Input Only)

Use the arrow keys to navigate in the VIDEO menu to the entry PHASE and press ENTER/SELECT to open the PHASE window.

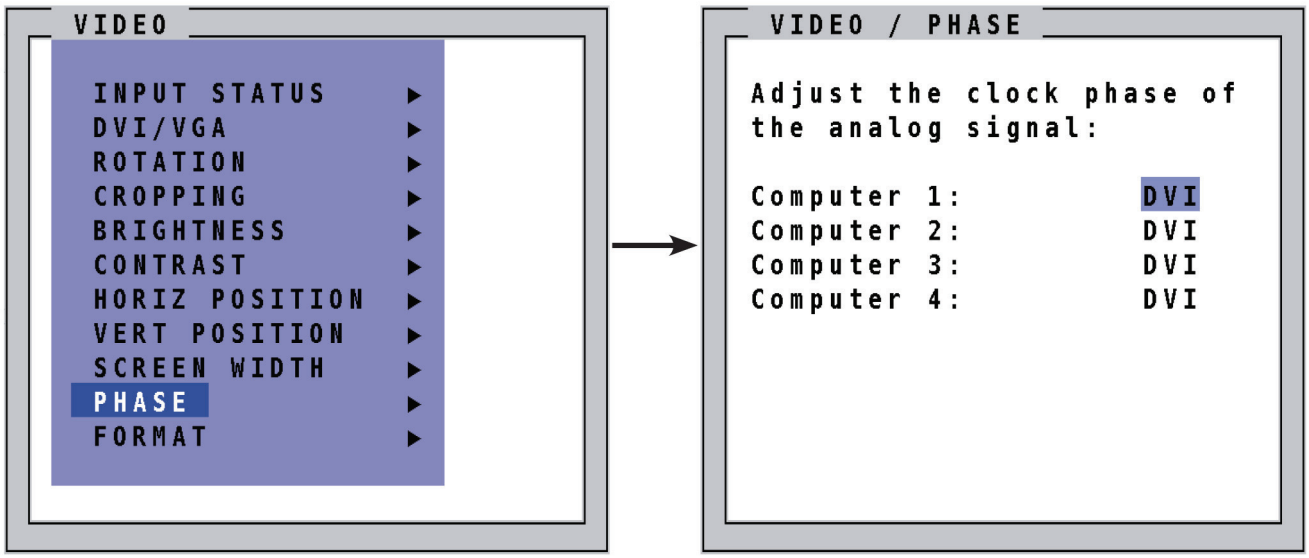


Figure 8-9. Video>Phase screen.

Incorrect phase (sampling time of pixel color value) may result in blurring, bad contrast, or poor legibility. Use this setting to adjust phase.

8.9 Format

Use the arrow keys to navigate in the VIDEO menu to the entry FORMAT and press ENTER/SELECT to open the FORMAT window.

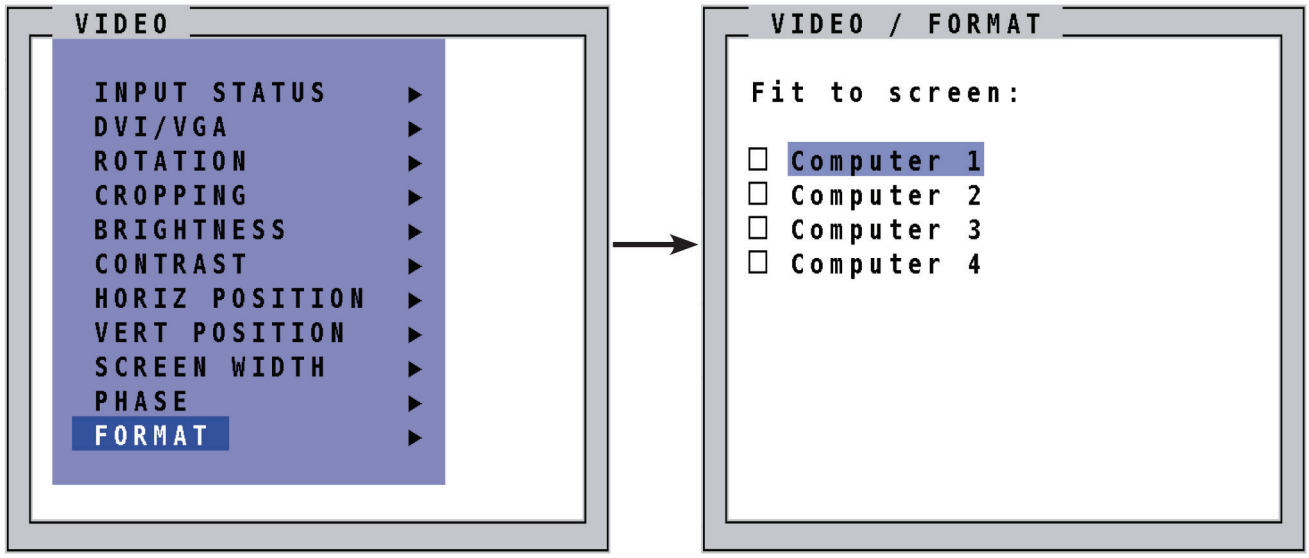


Figure 8-10. Video>Format screen.

When using a wide-screen monitor (aspect ratio 16:10) in Quad mode, a video input with a different aspect ratio is normally displayed with black borders to the left and right. If "fit to screen" is enabled, the image is resized to fill the entire quadrant in Quad mode.

By default, "fit to screen" is disabled to display each source in its native aspect ratio in display modes (Quad, PiP, Full) of ServSwitch 4site Flex.

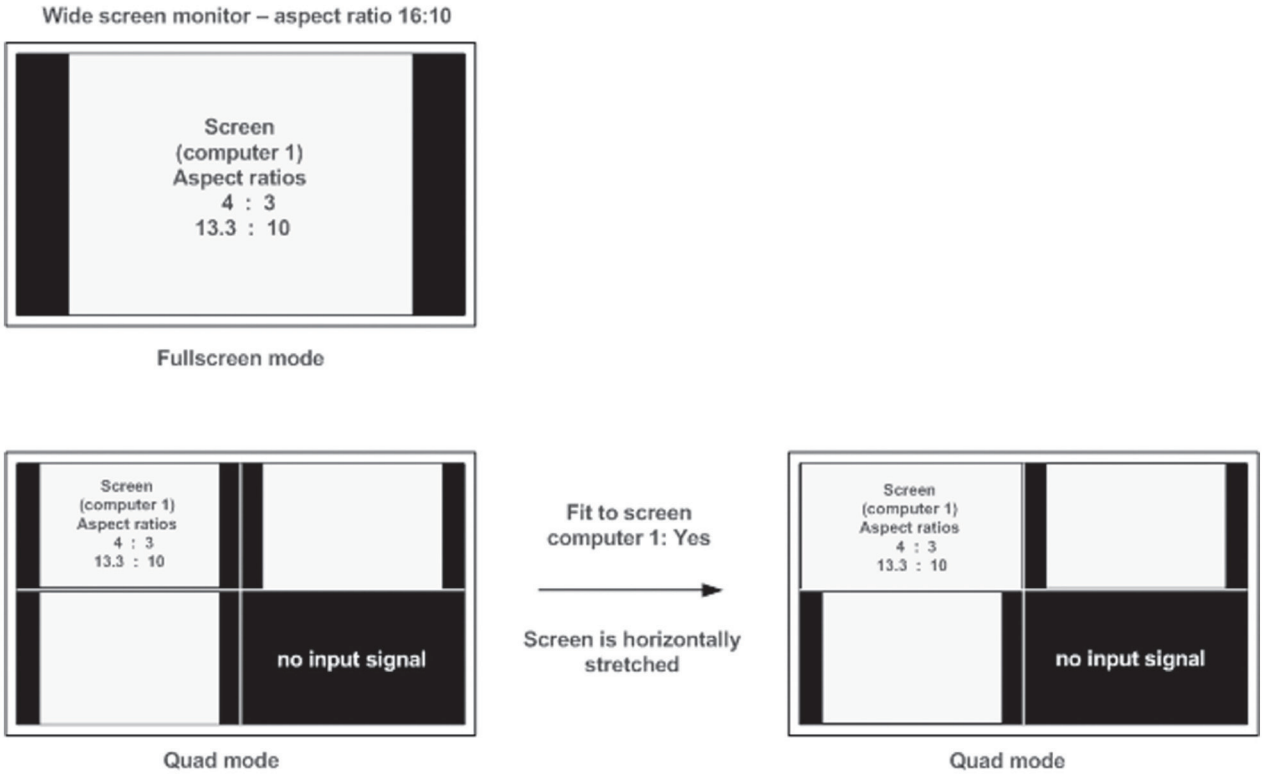


Figure 8-11. Wide-screen monitor in Quad mode.

PiP mode for wide-screen monitors

If you use a wide-screen monitor (for example with an aspect ratio of 16:10) and the active channel does not have a wide-screen aspect ratio (e.g. 4:3), PiPs are placed aside the full image of the active channel in the black bar on the right side. The full image of the active channel is displayed left-aligned on the screen resulting in a black bar on the right side. Provided appropriate PiP size (20%) is set, PiP images are thus placed entirely outside the full-screen channel. No screen content is overlapped. All content of all sources is visible.

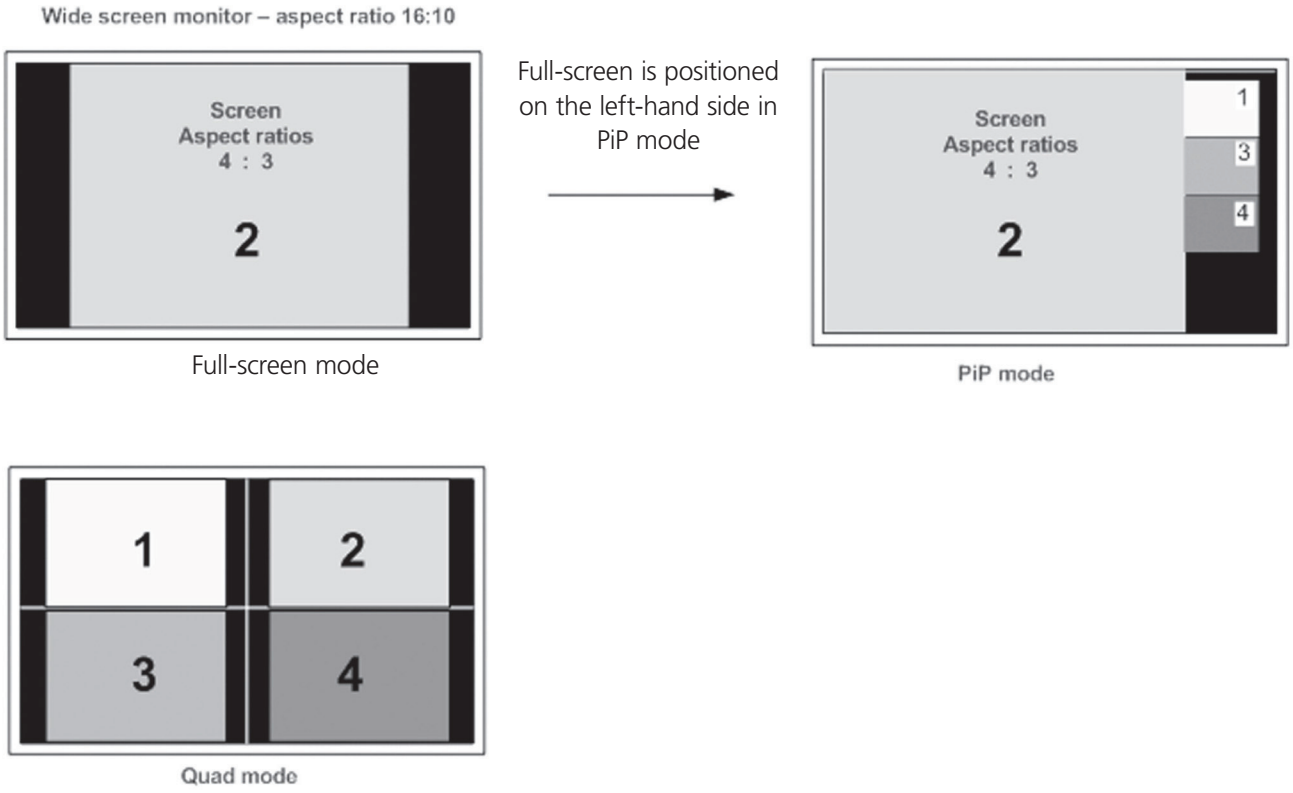


Figure 8-12. PiP mode for wide-screen monitors.

9. OSD Computer

9.1 Channel Mapping

Use the arrow keys to navigate in the COMPUTER menu to the entry CHANNEL MAPPING and press ENTER/SELECT to open the CHANNEL MAPPING window.

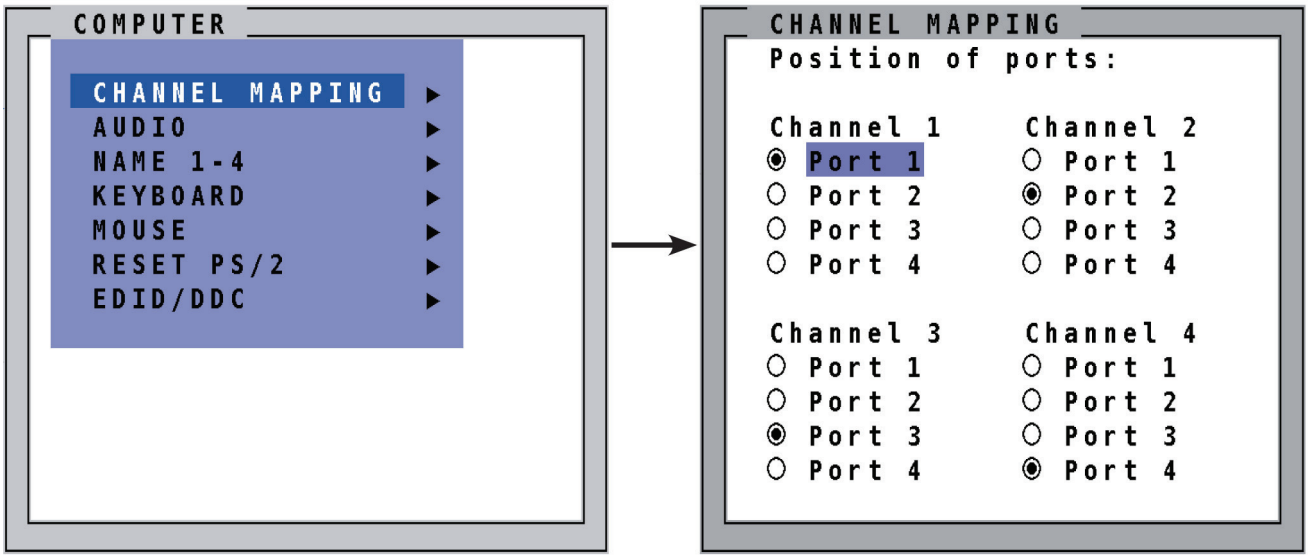


Figure 9-1. Computer>Channel Mapping screen.

In the CHANNEL MAPPING menu, you can change the assignment between physical input ports and logical channels. This can be useful, for instance, if computer needs to be shown on another position on the quad screen without having to swap the connectors at the inputs.

Use the arrow and "+/-" keys to navigate to the physical port that you would like to connect to the channel mentioned on the upper line. Press enter/select to change the connection.

9.2 Audio

Use the arrow keys to navigate in the COMPUTER menu to the entry AUDIO and press ENTER/SELECT to open the AUDIO window.

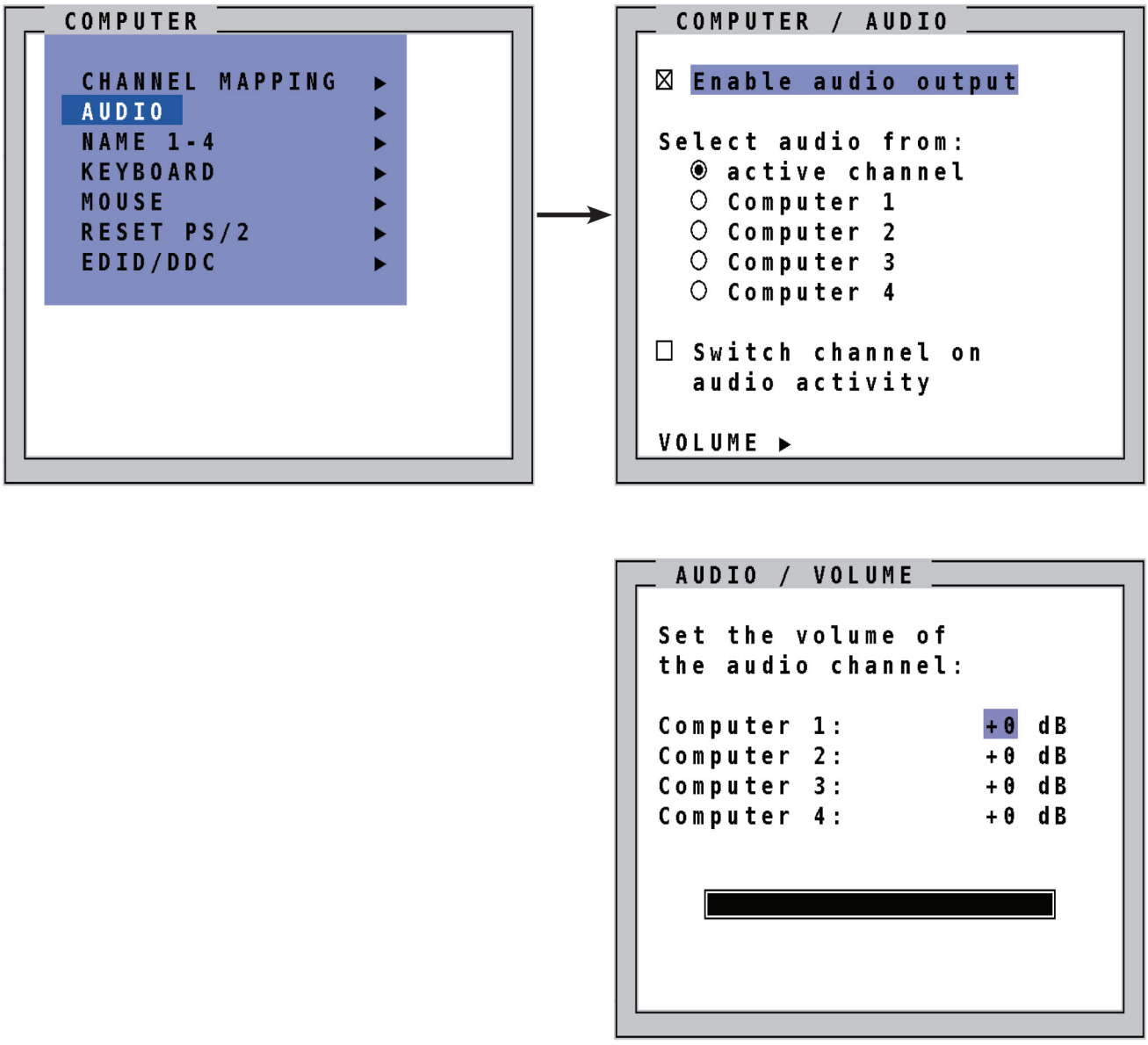


Figure 9-2. Computer>Audio>Volume screens.

"Enable audio output:" To enable or disable the audio output, activate or deactivate the checkbox "Enable audio output."

Selecting audio source: Select the audio source from the list. To ensure that the audio source is the computer being currently operated, select "active channel" from the list. For a fixed audio source, select one of the computers from the list.

Switch channel on audio activity: With this setting enabled, ServSwitch 4site Flex automatically switches to a channel on which an audio signal is detected.

Volume: To adapt the volume of the audio sources, navigate to VOLUME and press enter/select.

Use this window to adjust the volume for the audio sources in 2-db steps.

Change the volume of each channel with + and -

NOTE: You can also open this window with the hotkeys HK + -/+.

9.3 Name 1–4

Use the arrow keys to navigate in the COMPUTER menu to the entry NAME 1-4 and press ENTER/SELECT to open the NAME 1-4 window.

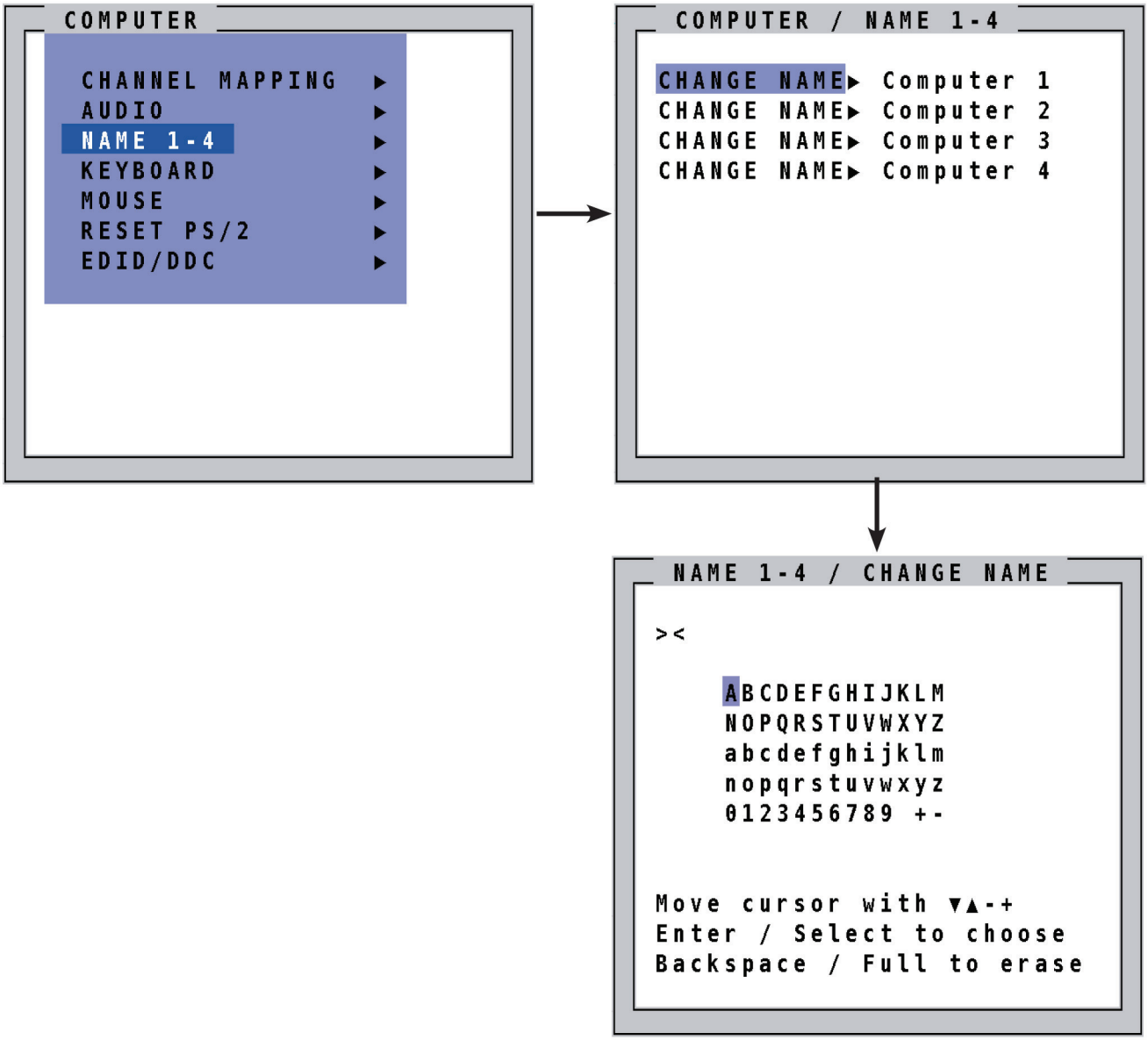


Figure 9-3. Computer>Name 1–4>Change Name screens.

Use the section NAME to assign a name to each of the four windows displayed when HOTMOUSE is in use.

Move the cursor in the edit window using arrows on your keyboard. Press ENTER/SELECT to choose a letter. Press BACKSPACE/FULL to erase.

9.4 Keyboard

Use arrow keys to navigate in the COMPUTER menu to the entry KEYBOARD and press ENTER/SELECT to open the KEYBOARD window.

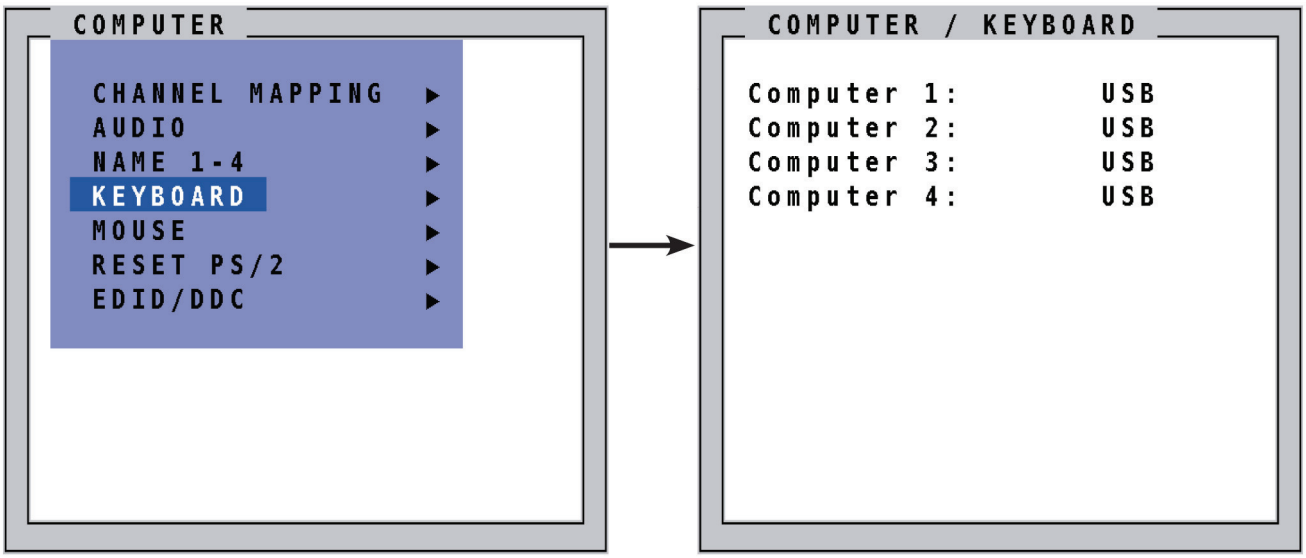


Figure 9-4. Computer>Keyboard screen.

Use this display feature to identify which keyboard type (USB, PC1, PC2 or PC3) has been recognized at which computer port.

9.5 Mouse

Use the arrow keys to navigate in COMPUTER menu to the MOUSE line and press ENTER/SELECT to open the MOUSE window.

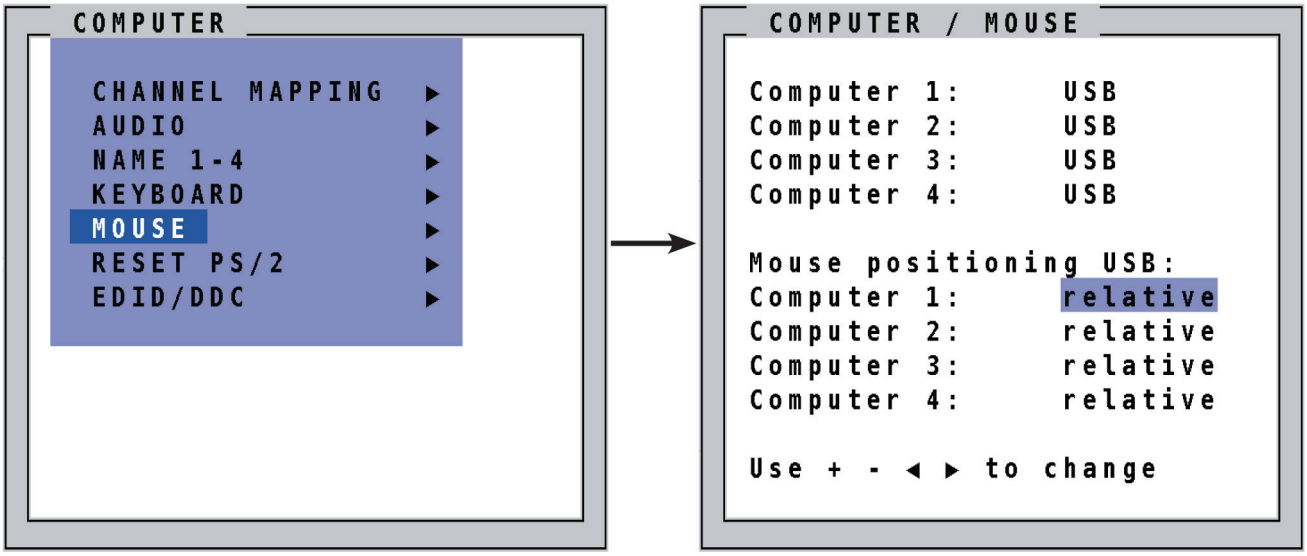


Figure 9-5. Computer>Mouse screen.

The upper half of the MOUSE window shows which mouse type (USB, PS/2, or PS/2 wheel) has been recognized at which computer port.

USB—mouse positioning

For USB ports, you may specify absolute or relative mouse positioning.

Choose absolute mouse positioning if a device is connected to the console that supports absolute coordinates, such as graphic trays, screen pads, or KVM extenders.

9.6 Reset PS/2

Use the arrow keys to navigate in the COMPUTER menu to the entry RESET PS/2 and press ENTER/SELECT to open the RESET PS/2 window.

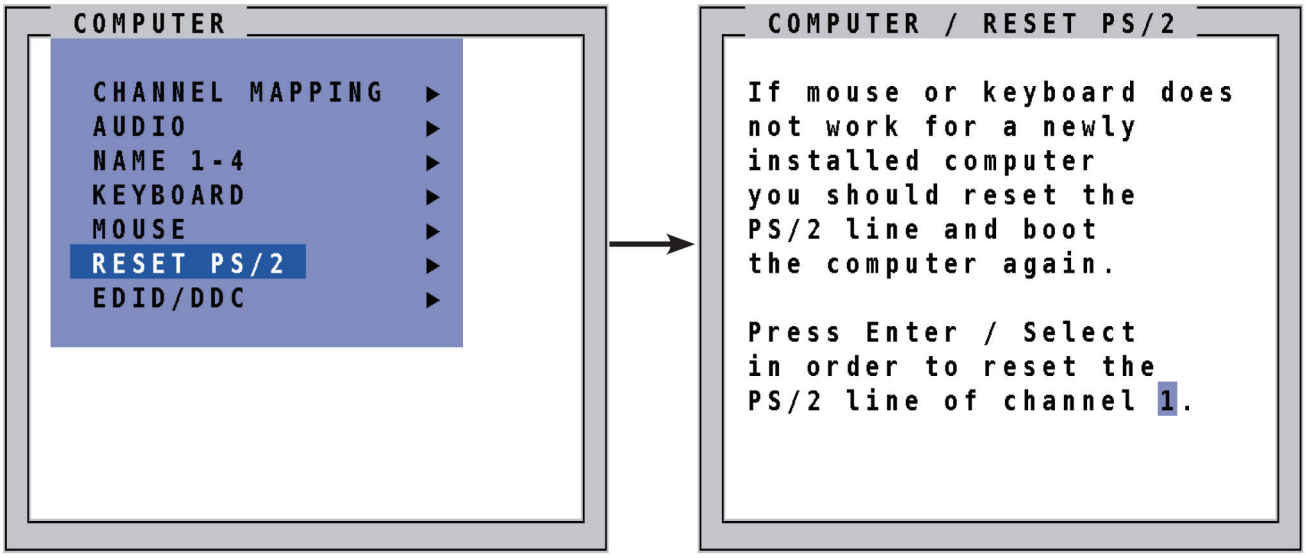


Figure 9-6. Computer>Reset PS/2 screen.

Use the arrow keys or "+" and "-" keys to select the channel (1 to 4) you want to reset and press ENTER/SELECT to confirm.

9.7 EDID/DDC

This window presents an overview of the status of the input EDIDs and the display EDID and allows editing of these.

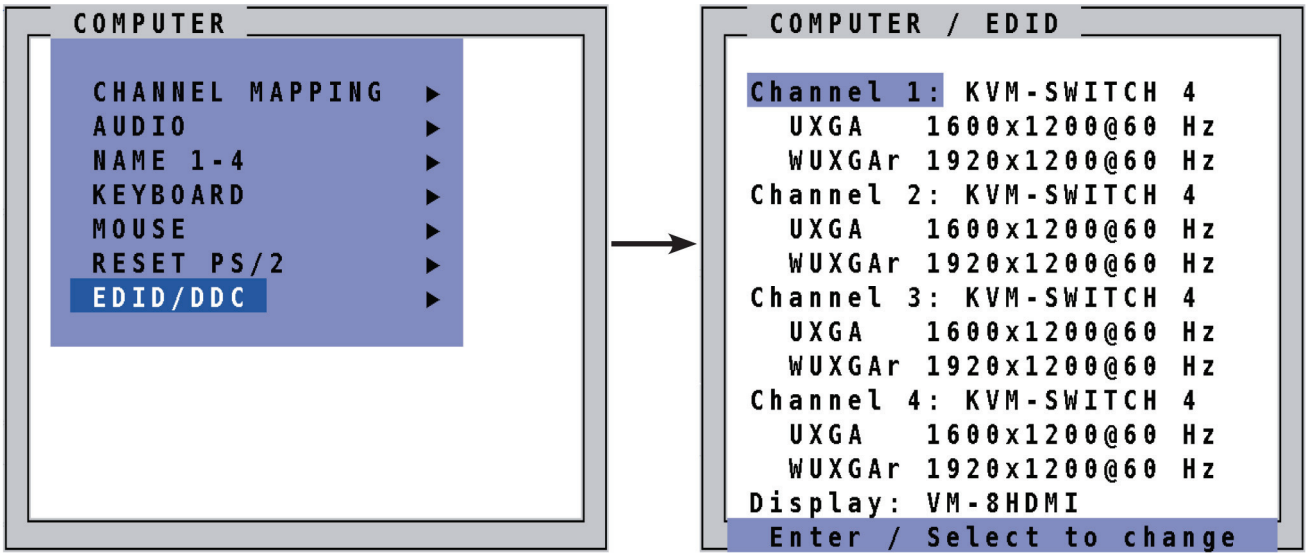


Figure 9-7. Computer>EDID screen.

Figure 9-8. Computer>EDID>DDC/Mode screen.

Use the arrow keys to select the channel EDID information.

Press ENTER/SELECT to open the window with detailed settings for this EDID.

Select a video mode for the channel using the arrow keys. Press ENTER/SELECT to confirm the selection.

Two freely selectable video modes can be programmed in the input EDID visible to the connected computer at the input port. We recommend programming the preferred video modes for the connected signal source.

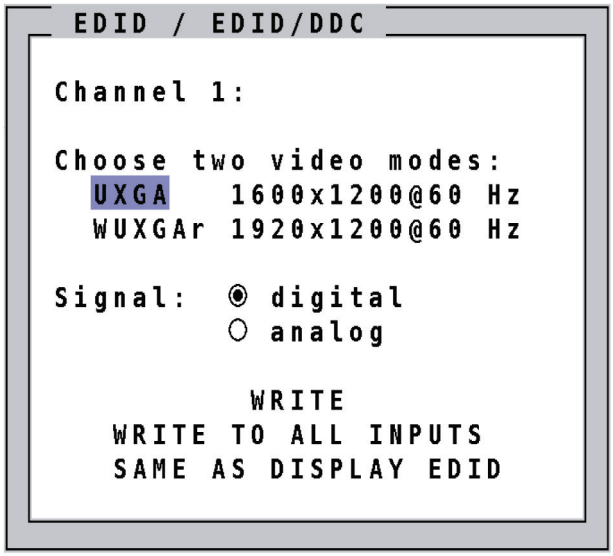


Figure 9-9. EDID>EDID/DDC screen.

ServSwitch 4site Flex also uses these entries to distinguish between confusable analog input video signals. The following groups of analog input signals are difficult to distinguish automatically:

WUXGA 1920x1200 60 Hz
UXGA 1600x1200 60 Hz
UXGA 1600x1200 60 Hz with reduced blanking

WUXGA 1920x1200 50 Hz
UXGA 1600x1200 50 Hz
UXGA 1600x1200 50 Hz with reduced blanking

SXGA+ 1400x1050 60 Hz
WSXGA 1680x1050 60 Hz

XGA 1024x768 60 Hz
WXGA 1280x768 60 Hz
WXGA 1360x768 60 Hz

If you experience problems with the automatic input detection of an analog input signal in these groups, you can overwrite the automatic detection by programming the expected video signal into the input EDID.

Use the arrow keys to navigate to the first video mode entry and press ENTER/SELECT to open the window with a list of selectable video modes.

In this window, use the arrow keys to select the desired line in the list shown on the right and press ENTER/SELECT for the video format.

Use the arrow keys to navigate to the second video mode entry, and press ENTER/SELECT to open the window with a list of selectable video modes.

Use the arrow keys to navigate to "Signal" and press ENTER/SELECT to switch between analog or digital. This setting specifies whether the EDID should identify the ServSwitch 4site Flex as an analog or digital device. Usually it is safe to leave this setting at"digital."

Use the arrow keys to navigate to the following write options:

- WRITE: Save the changes in the current input EDID.
- WRITE TO ALL INPUTS: Save the changes to all four input EDIDs.

Alternatively, the EDID data of the connected display can be used. To do this, navigate to SAME AS DISPLAY EDID and press ENTER/SELECT.

• SAME AS DISPLAY EDID: Write the contents of the display EDID to the current input EDID.

Press ENTER/SELECT to start the selected write option and wait until "successful" is displayed in the bottom status line. At this point, the EDID data can be written to one or all of the four channels.

NOTE: If the EDID data of the connected video source is used, the switch behaves as if the display is connected directly to the source.

NOTE: Keep in mind that this setting will overwrite the automatic analog input mode detection. If you connect a different video source, or change the video mode from the PC, you may need to change this setting again to get correct results. For the detection of digital input signals, this setting has no effect.

Alternatively, the display EDID data can be copied to the inputs:

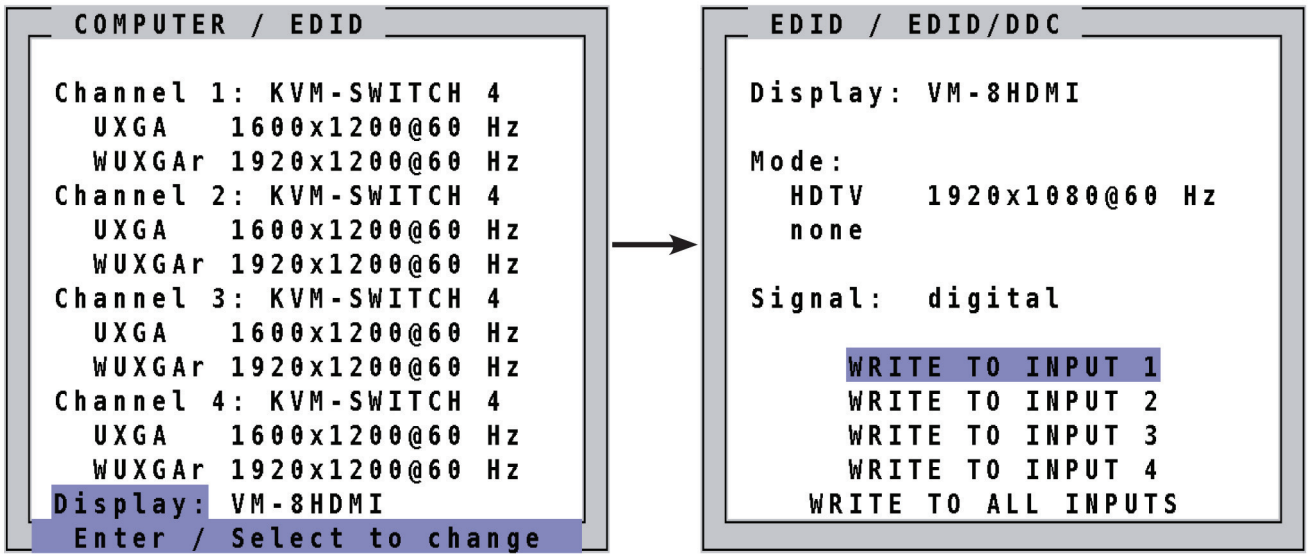


Figure 9-10. Computer>EDID/DDC screen.

An overview of the contents of the display EDID is seen above.

It has the following write options:

WRITE TO INPUT 1	Write the monitor EDID to Input 1
WRITE TO INPUT 2	Write the monitor EDID to Input 2
WRITE TO INPUT 3	Write the monitor EDID to Input 3
WRITE TO INPUT 4	Write the monitor EDID to Input 4
WRITE TO ALL INPUTS	Write the monitor EDID to all inputs

NOTE: The content of the input EDIDs can be reset to default by the OSD function CONFIGURATION/FACTORY RESET.

10. OSD—USB Device 1–4

10.1 USB Port Status

ServSwitch 4site Flex supports and switches transparent USB 2.0 devices such as printer, camera, 3D mouse, finger printer, and external memory. (Example: Connect a memory stick to copy data from one computer to the stick, and from the stick to another computer connected to ServSwitch 4site Flex: Data can be copied between computers without being networked.)

Use the arrow keys to navigate in the OSD menu to the entry USB DEVICE 1-4 (see the screen on the left in Figure 10-1) and press ENTER/SELECT to open the window. The screen on the right in Figure 10-1 shows the status display of the transparent USB 2.0 switch.

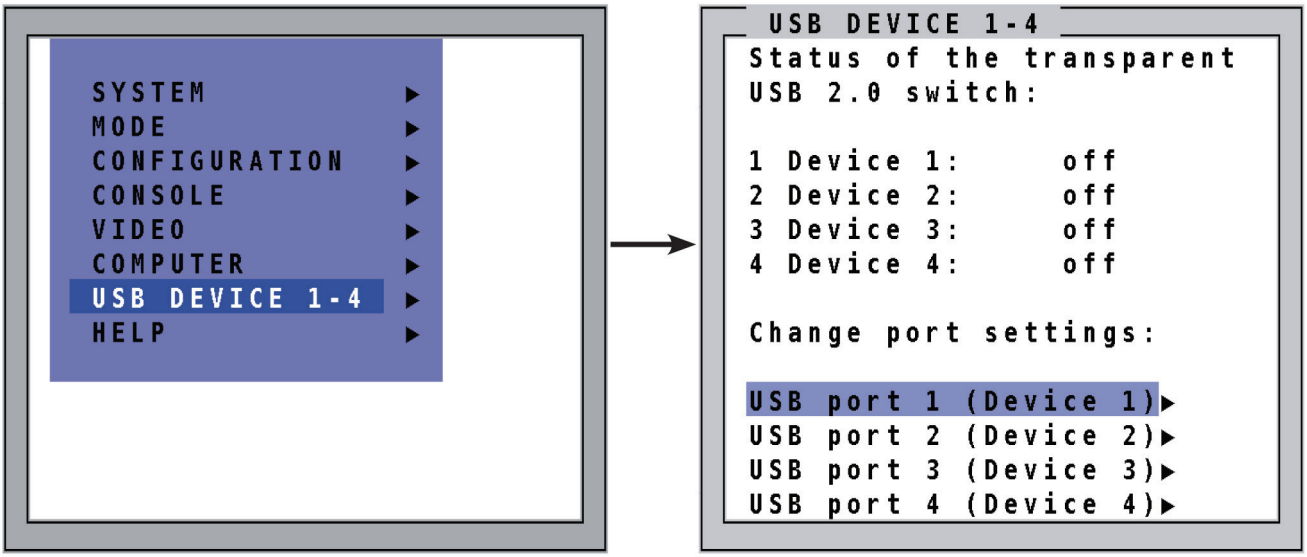


Figure 10-1. USB Device 1–4>USB Device screen.

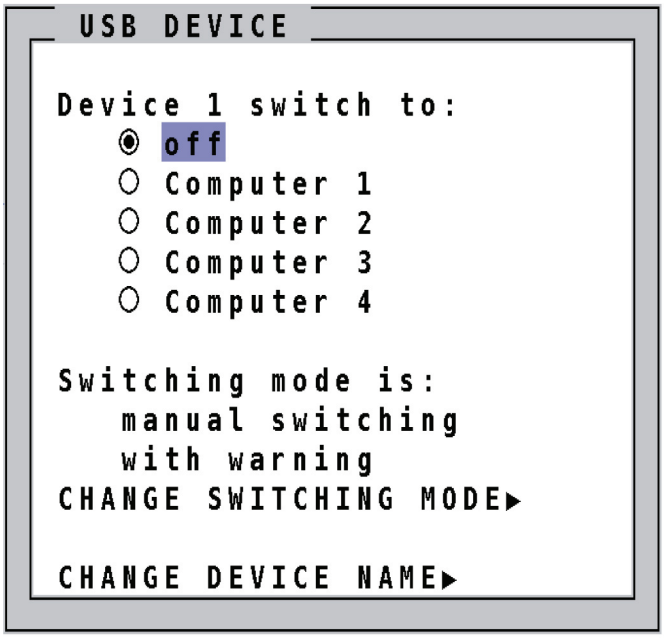


Figure 10-2. USB Device screen.

OFF: Port is not switched to a computer. A USB device may be connected, but it is not switched to a computer.

Computer (1-4): Port is switched to one of the computers.

To change port and switch settings, use the arrow keys to select one of the four USB ports and open its submenu by pressing ENTER/SELECT.

Device 1 switch to: Off by default. To manually switch this USB port to one of the four computers, use the arrow keys to select one of the four computers and press ENTER/SELECT.

The following options can be selected for the USB port: manual switching, change switching mode, change USB device name.

10.2 Switching Mode

By default, switching mode is "manual switching with warning."

To change the switching mode use the arrow keys to navigate to "CHANGE SWITCHING MODE" and press ENTER/SELECT.

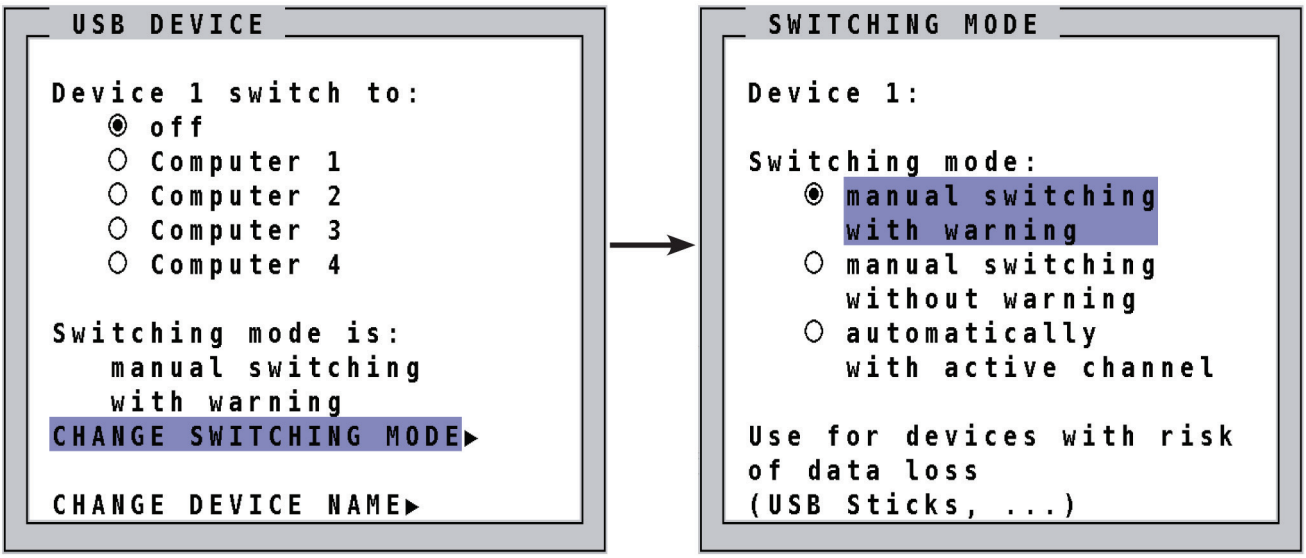


Figure 10-3. USB Device>Switching Mode screen.

Use the arrow keys to chose one of the following modes to change the switching mode:

1. Manual switching with warning: This mode allows switching the USB port manually by selecting one of the computers connected. But, before the switch is executed, the following warning message is displayed: "In order to prevent data loss, stop the USB device before switching!" To switch, press ENTER/SELECT. We recommend this switching mode for USB devices with risk of data loss (for example, USB stick, printer, external memory).
2. Manual switching without warning: This mode allows switching the USB port manually by selecting one of the computers connected. The switching is executed immediately. This switching mode is recommended for USB devices without risk of data loss.
3. Automatically with active channel: In this mode, the USB device/port is always switched automatically with the active channel. When switching channel/computer this USB device/port will automatically be switched to the activated channel/computer.

NOTE: After power on, all USB devices are disconnected from computers except devices with switching mode "automatically with active channel."

10.3 Change Device Name

In the "USB DEVICE/USB DEVICE" menu, choose "Change device name" and press ENTER/SELECT to change the name of the connected USB device.

Use the keyboard to rename the USB device or use the front-panel buttons (as described in the OSD). Exit the menu. The new name will automatically be saved and displayed in the other menus.

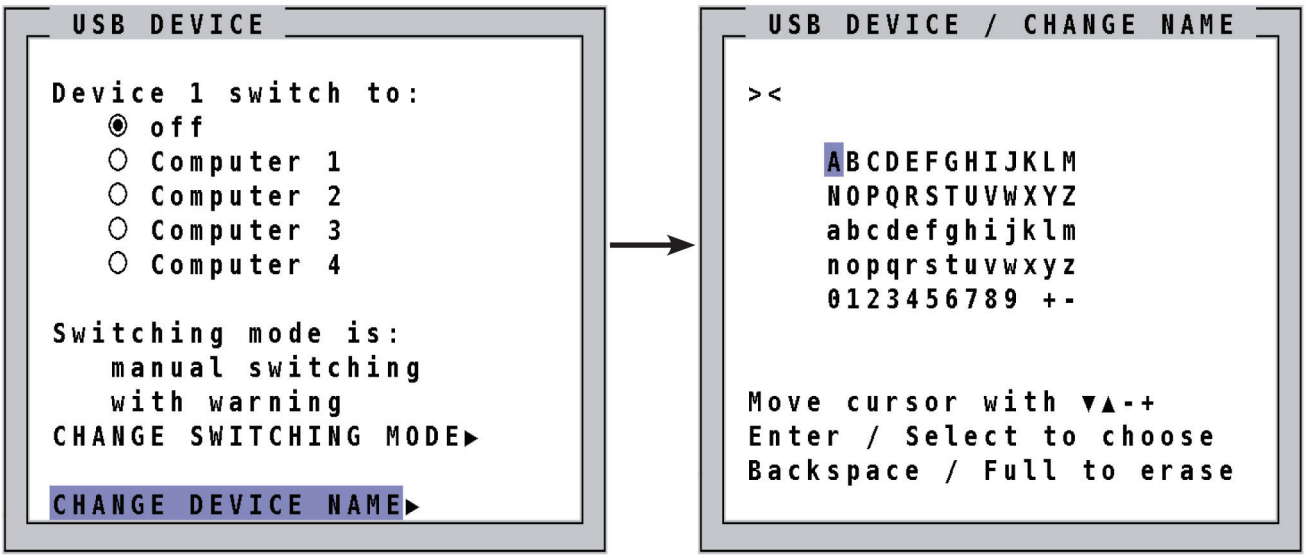


Figure 10-4. USB Device>Change Name screen.

NOTE: Use hotkey + "u" (by default: hotkey = Ctrl + Alt) to quickly access the USB DEVICE 1-4 menu. This allows quick access to this menu when switching manually. To directly open the switching menu of, for example, USB device/Port 1, use hotkey + "F1" (by default: hotkey = Ctrl + Alt).

11. OSD Help

Use the arrow keys to navigate in the HELP menu to the desired line and press ENTER/SELECT to open the corresponding window.

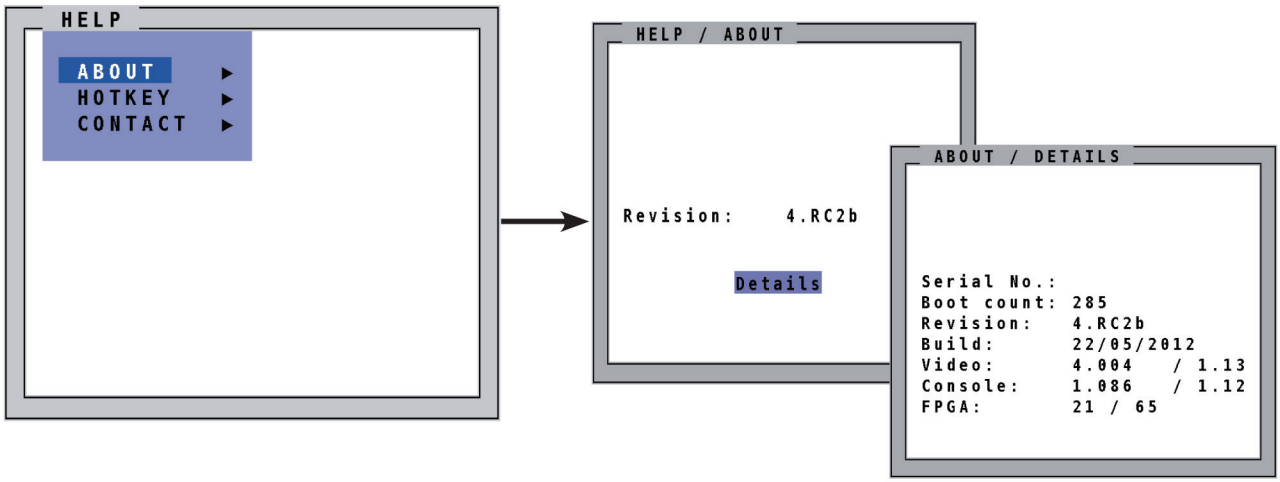


Figure 11-1. Help>About/Details.

HELP > ABOUT displays the current revision levels hardware and firmware.

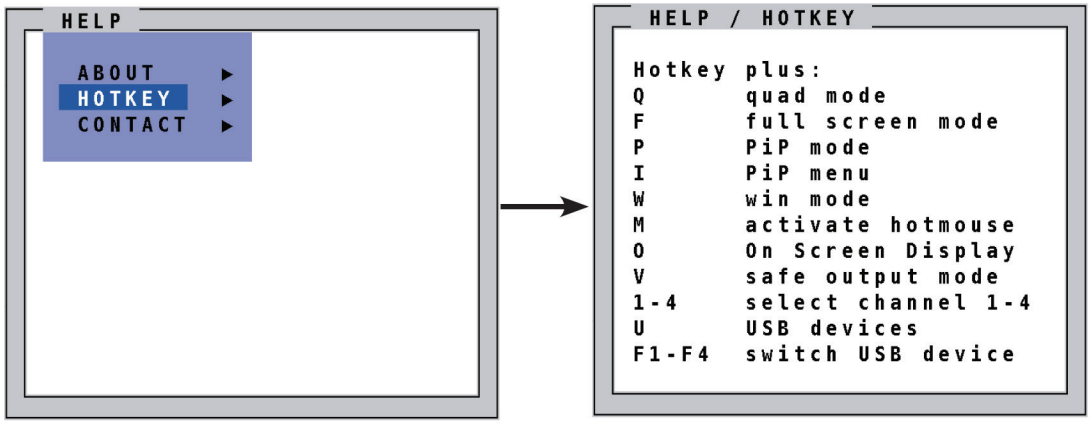


Figure 11-2. Help>Hotkey.

HELP > HOTKEY provides a guide to hotkey shortcuts.

12. Hotmouse

Hotmouse is an exclusive function offered by ServSwitch 4site Flex. It works with your standard mouse or trackball and touchscreens. Similar to using hotkeys on your keyboard, Hotmouse is a quick and comfortable way to operate ServSwitch 4site Flex simply with your standard mouse, trackball, or touchscreen. No software or additional hardware is required.

When activated, your mouse cursor becomes hotmouse cursor—a numbered arrow—that enables it to perform all hotmouse functions.

12.1 Activating the Hotmouse Cursor

To activate the hotmouse cursor, move your mouse on the console four times in a rapid horizontal shaking motion or with hotkey + M.

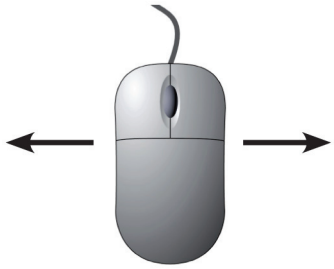


Figure 12-1. Shake mouse up and down on screen four times to get hotmouse cursor.

The hotmouse cursor can also be activated via touchscreen: Tap the screen twice and leave your finger pressed on the touchscreen after the second tap (tap – hold, like a double click without lifting the finger on the second click), until the hotmouse menu opens. Now click outside the hotmouse menu to open the hotmouse cursor.

Close the hotmouse by double clicking or with hotkey + M.

The hotmouse cursor changes its look depending on its position on the screen (arrows in vertical or horizontal direction, and number of channel).

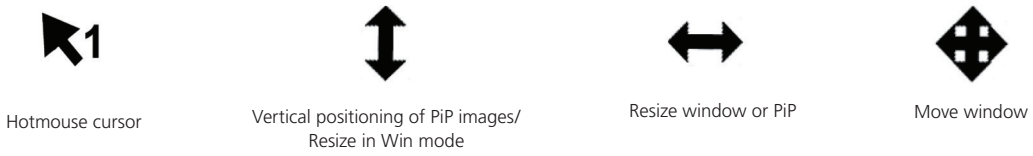


Figure 12-2. Hotmouse cursor options.

Use the hotmouse cursor to perform the following functions:

In Full-Screen mode: Switch to another full-screen channel.

In Quad mode: Select another active channel (keyboard, mouse).

In PiP mode: Modify position and size of PiP images.
Change active channel

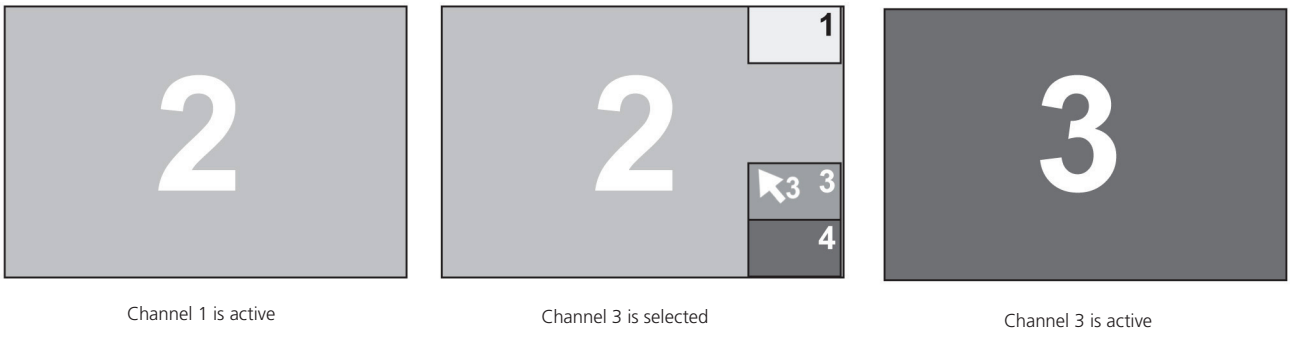
In Win mode: Select mode for resize, channel select, and select options (hotmouse menu)
Modify position and size of Windows
Change active channel

12.2 Hotmouse Cursor in Full-Screen Mode/Quad Mode

When you activate the hotmouse cursor in Full-Screen mode, PiP images of the other channels are temporarily displayed to allow you to switch to another channel.

Switching to another full-screen channel

Activate hotmouse cursor. Move the hotmouse cursor over the PiP image of the channel that you want to activate and click the left mouse button.



Channel 1 is active | Channel 3 is selected | Channel 3 is active

Figure 12-3. Example: Switch from Channel 2 to Channel 3.

Hotmouse cursor in Quad mode

Switching active channel (mouse, keyboard)

Activate Hotmouse Cursor. To change the active channel (switching mouse and keyboard), position the Hotmouse Cursor in the respective channel field (1 to 4) and press the left mouse button.

NOTE: When you move into another channel field, the channel number in the Hotmouse cursor changes.

Channel 1 is active | Channel 3 is selected | Channel 3 is active

Figure 12-4. Example: Switch active channel from 1 to 3.

12.3 Hotmouse Cursor in PiP Mode

Change active channel

Enable Hotmouse Cursor. Move the Hotmouse Cursor to the PiP image of the channel you want to activate and press the left mouse button.

NOTE: When the hotmouse cursor moves over a PiP image, its appearance changes (arrows, channel number).

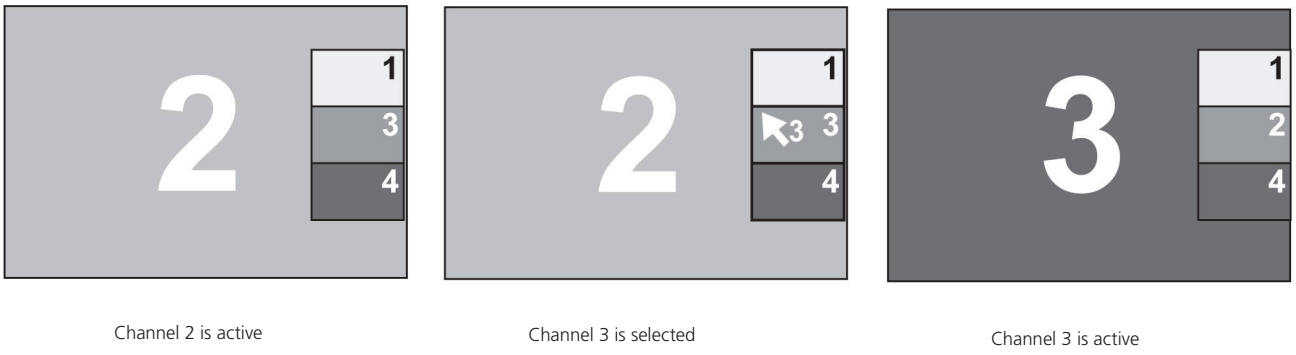


Figure 12-5. Example: Switch from Channel 2 to Channel 3.

Vertical positioning of PiP images

Activate Hotmouse Cursor. Move the Hotmouse Cursor to the PiP image area, hold down the left mouse button and drag the PiPs to the desired vertical position.

NOTE: As soon as the hotmouse cursor moves over a PiP image, its appearance changes (arrows pointing vertically).

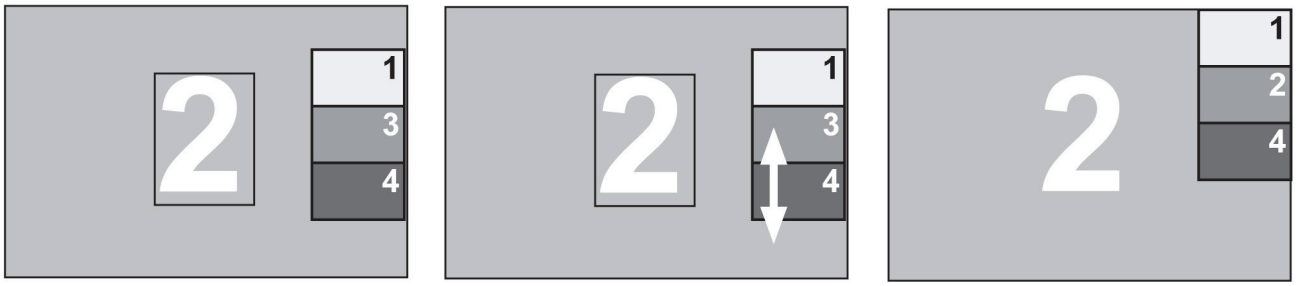


Figure 12-6. Example: Move PiP images upward.

Modify size of PiP images

Activate Hotmouse Cursor and move to the left edge of the PiP image area until horizontal arrows appear in the Hotmouse Cursor. Hold down the left mouse button and drag the Hotmouse Cursor to the left to increase PiP image size, or to the right to reduce PiP image size.

NOTE: As soon as the Hotmouse Cursor moves to the left edge of the PiP image area, its appearance changes (horizontal arrows, channel number).

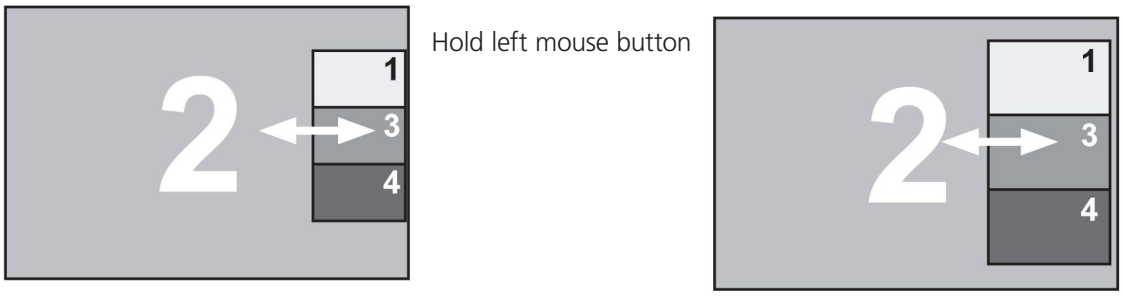


Figure 12-7. Scaling PiP images up.

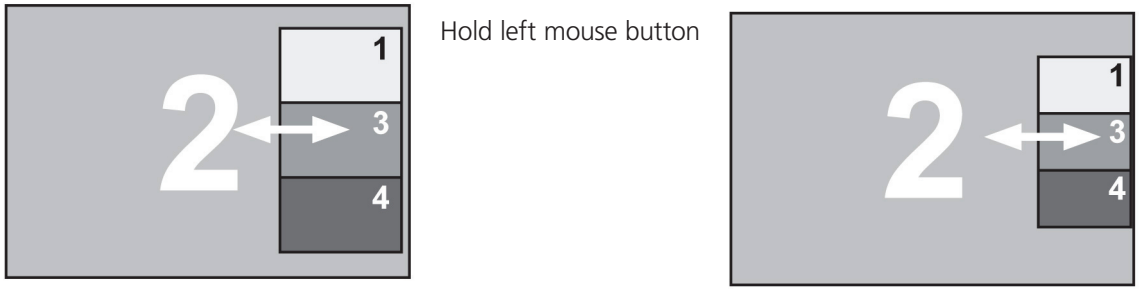


Figure 12-8. Scaling PiP images down.

12.4 Hotmouse Cursor in Win Mode

Change active channel

Enable Hotmouse Cursor. Move the Hotmouse Cursor to the window of the channel you want to activate and press the left mouse button.

NOTE: When the hotmouse cursor moves over a window, its appearance changes (arrows, channel number). To close the hotmouse cursor, left double-click or use hotkey +M in Win mode.

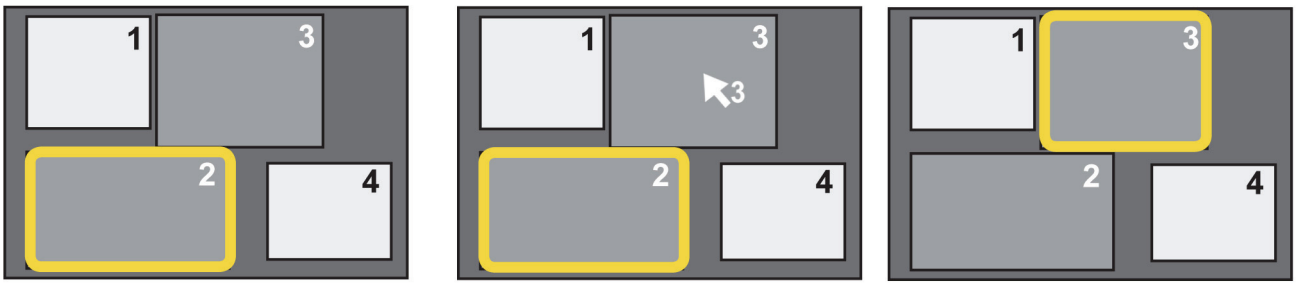
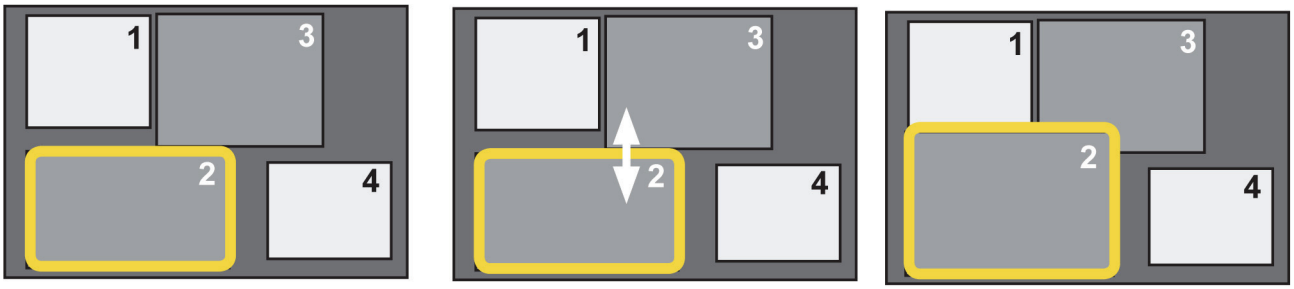


Figure 12-9. Example: Switch from Channel 2 to Channel 3.

Resizing of windows

Activate Hotmouse Cursor. Move the Hotmouse Cursor to the window area, hold down the left mouse button and drag the window to the desired size.

NOTE: As soon as the hotmouse cursor moves over a window, its appearance changes (arrows pointing vertically or horizontally).



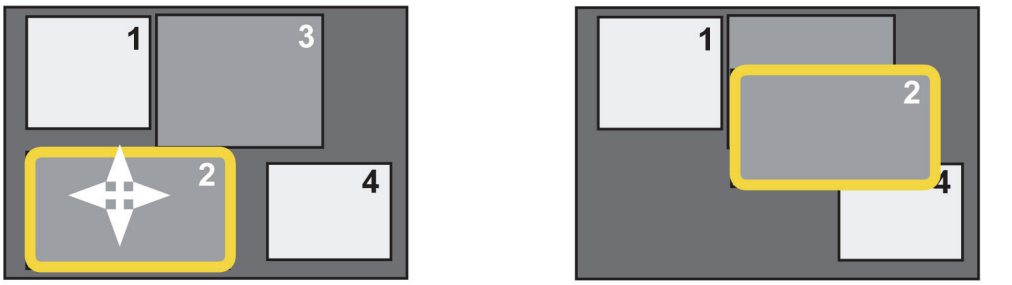
Channel 2 needs to be resized. The edge of Channel 2 is selected for vertical rezing. Channel 2 is resized.

Figure 12-10. Example: Resizing windows.

Repositioning windows

Enable Hotmouse Cursor. Move the Hotmouse Cursor to the window that you want to move and press the left mouse button.

NOTE: When the hotmouse cursor moves over a window, its appearance changes (arrows pointing up, down, left, and right).



Channel 2 is active and the hotmouse is activated. Channel 2 is moved to a new location on the screen.

Figure 12-11. Example: Repositioning the windows.

Move the hotmouse cursor to the top right corner of the signal window, and the following buttons will appear:

O = Open OSD hotmouse context menu

S = Swap signal windows. After this is selected, the other window is clicked.

R = Toggle aspect ratio locking for current window

12.5 Hotmouse Menu

12.5.1 Activating/Operating

Activating

Activate Hotmouse Cursor and press the right mouse button to open the Hotmouse Menu. The Hotmouse Menu can also be opened via touchscreen: Tap the screen twice, and leave your finger pressed on the touchscreen after the second tap (tap–hold, like a double click without lifting the finger on the second click), until the Hotmouse Menu opens.

By clicking outside the Hotmouse Menu, you can open the Hotmouse Cursor to enlarge and reposition PiPs (only in PiP mode), switch channels, and modify Win Mode.

After you are finished using the Hotmouse Cursor, the Hotmouse Menu will reopen. Menu appearance varies, depending on display mode (Full/Quad/ PiP/Win). This menu allows you to carry out switching operations and change display mode settings.

Operating

The Hotmouse Menu allows you to carry out switching operations and to enter PiP settings by mouse click (left mouse button).

Click Help on the Hotmouse Menu for information on the individual symbols.

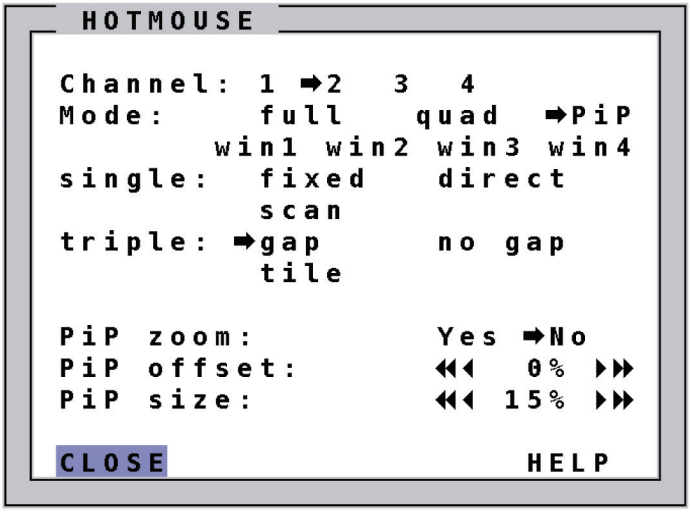


Figure 12-12. Hotmouse menu in PiP mode.

Hotmouse Menu in PiP-mode: Click with the left mouse button on the arrow symbols to either increase or decrease the values in question. Clicking on the outer arrow symbols sets the minimum or maximum value.

After having completed the settings, click on CLOSE to close the Hotmouse Menu window and exit the Hotmouse Function.

Click on HELP to open the HOTMOUSE HELP window.

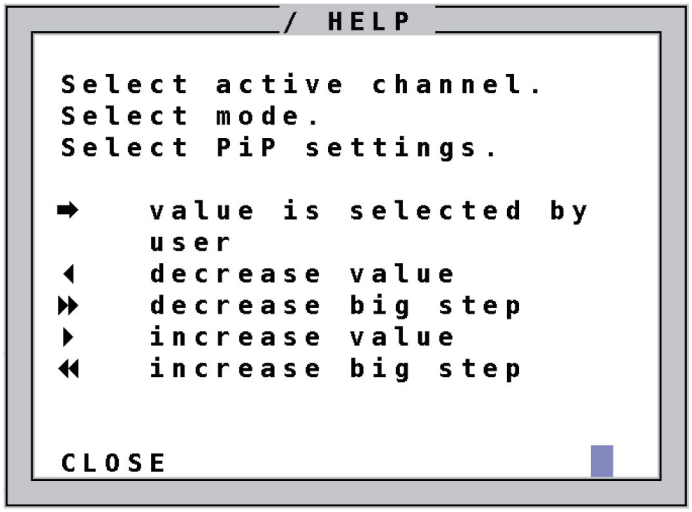


Figure 12-13. Help screen.

12.5.2 Mode—Quad, Full, PiP, or Win

The individual modes can be set as follows:

Hotmouse Menu—QUAD MODE

Use the mouse to navigate to a channel in the Hotmouse Menu and click the left mouse button to activate it. You can also switch to a different mode with the left mouse button.

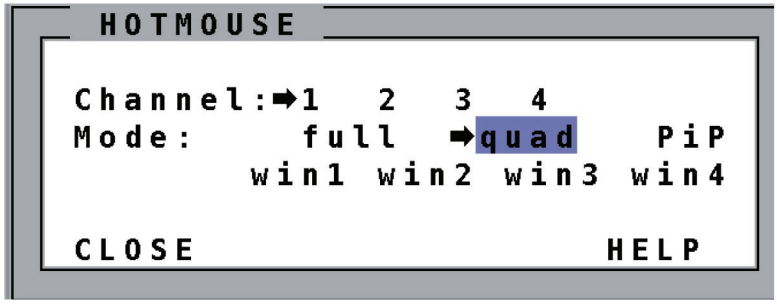


Figure 12-14. Hotmouse menu in Quad mode.

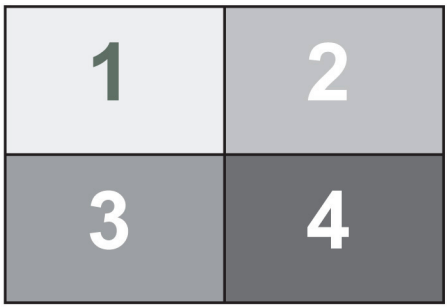


Figure 12-15. Quad mode.

Hotmouse Menu—FULLSCREEN MODE

Use the mouse to navigate to a channel in the Hotmouse Menu and click the left mouse button to activate it. You can also switch to a different mode with the left mouse button.

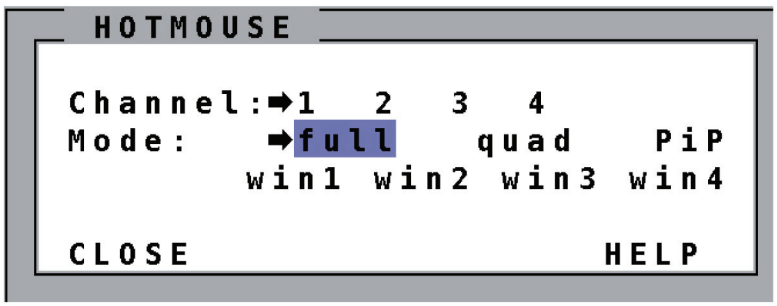


Figure 12-16. The Hotmouse menu in Full-Screen mode.

Figure 12-17. Full-Screen mode.

Hotmouse menu—PIP mode

Use the mouse to navigate to a channel in the Hotmouse Menu and click the left mouse button to activate it. Change the position and size of PiP images, and PiP zoom. Change PiP mode (triple/triple gap/single fixed/single direct/single scan) and scan time.

Triple gap: PiP images are displayed with a gap in place of the active channel.

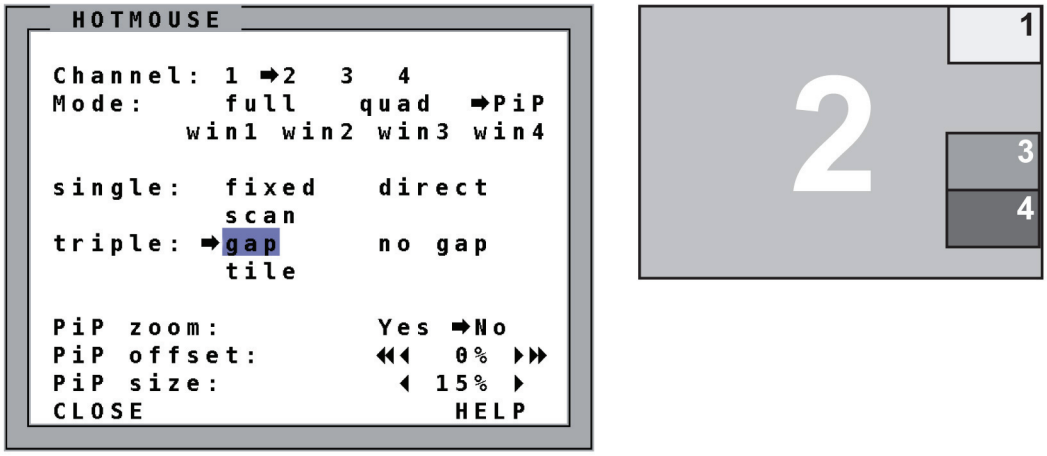


Figure 12-18. Triple gap.

Triple no gap: PiP images are displayed without a gap.

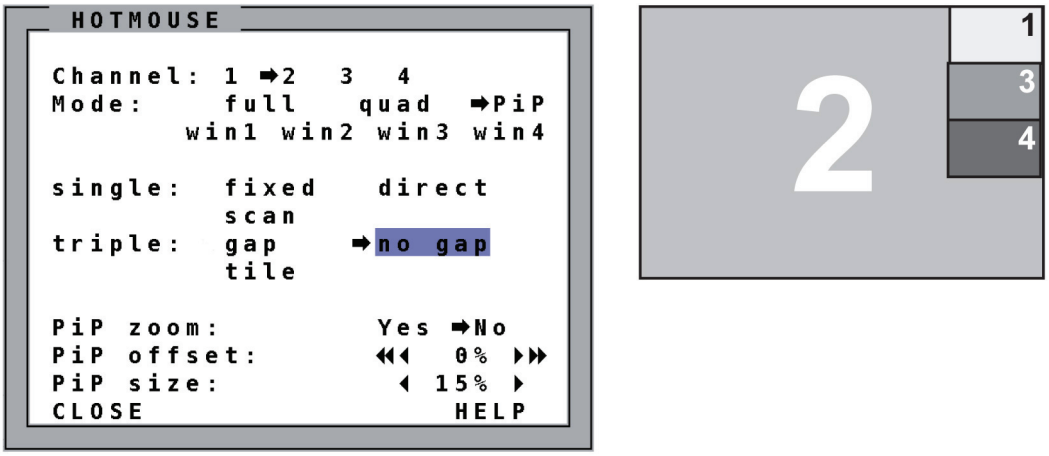


Figure 12-19. Triple no gap.

Triple tile: The size of the main image and the PiP images is optimized so that the main image and the PiP images are shown as large as possible without overlapping.

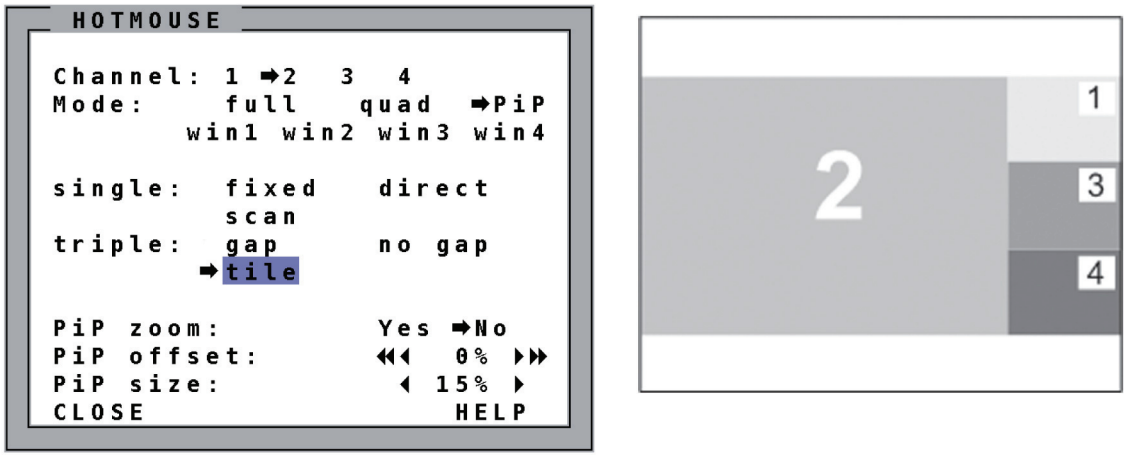


Figure 12-20. Triple tile.

Single fixed: One selected PiP image is permanently displayed.

Single direct: Press the front panel buttons 1, 2, 3, or 4 to directly select the PiP channel you want.

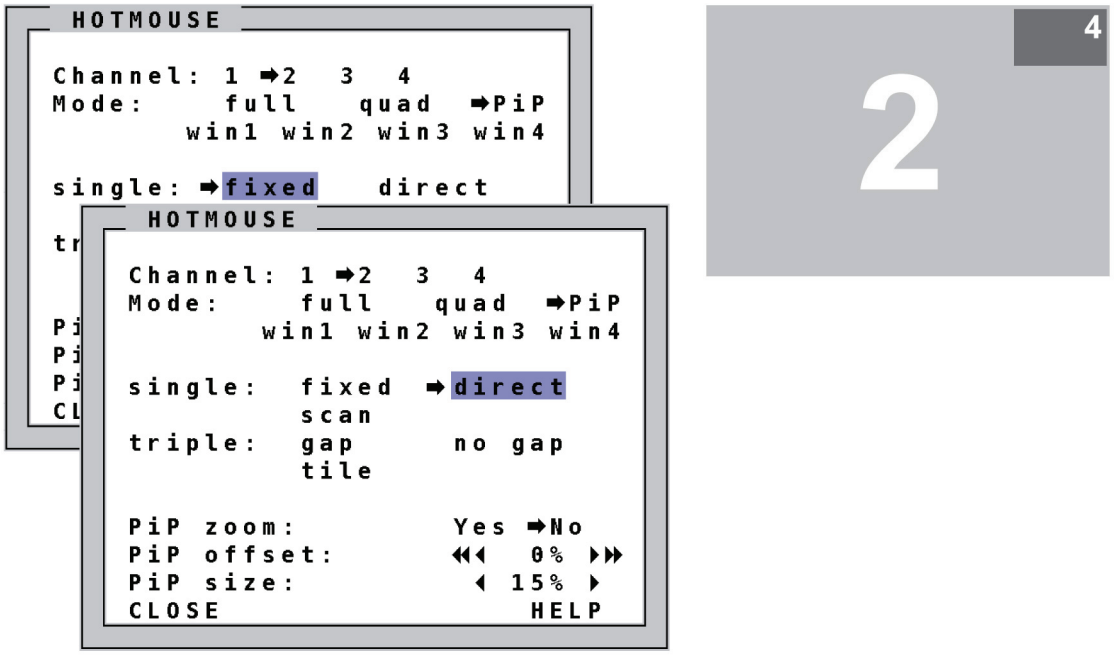


Figure 12-21. Single fixed and direct PiP image screens.

.

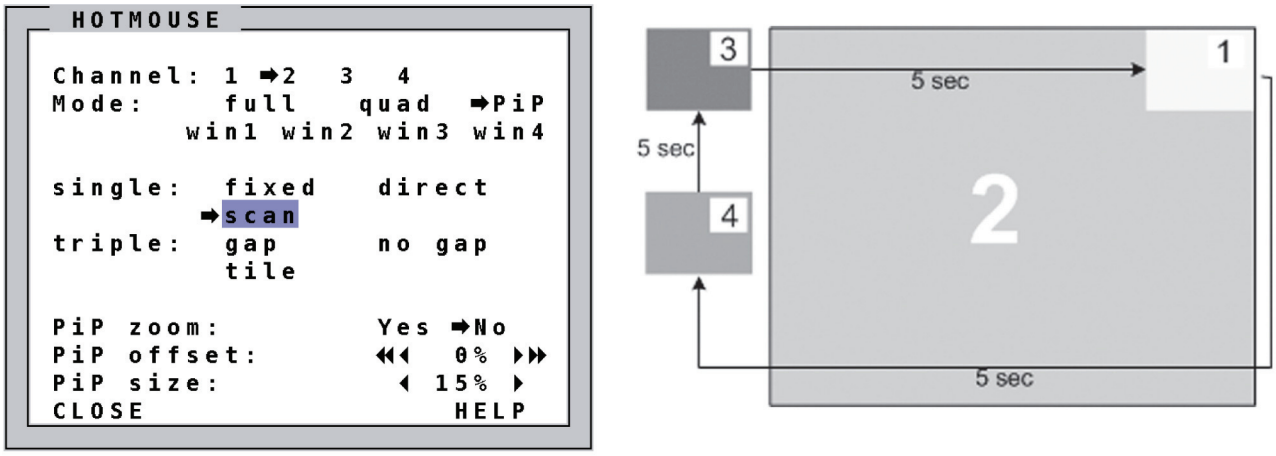


Figure 12-22. Single scan: Cycles through the PiP images at a set interval.

Win mode

Use the section "Mode" in the hotmouse menu in WIN mode to save the position of your channel windows. Four different configuration sets can be saved under win1, win2, win3 or win4.

1. Enter Win mode.
2. Position and/or resize your channel windows as desired.
3. Activate the hotmouse menu.
4. Select one of the win slots.
5. Click "Save" at the bottom of the hotmouse menu.

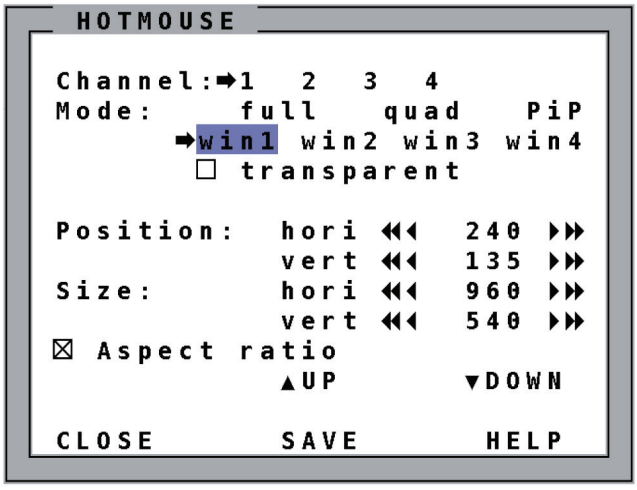


Figure 12-23. Win mode screen.

13. Troubleshooting

13.1 Contacting Black Box

If you determine that your ServSwitch 4site Flex is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

13.2 Shipping and Packaging

If you need to transport or ship your ServSwitch 4site Flex:

- Package it carefully. We recommend that you use the original container.
- If you are returning the unit, make sure you include everything you received with it. Before you ship for return or repair, contact Black Box to get a Return Authorization (RA) number.

Appendix A. Keyboard Commands

ServSwitch 4site Flex supports two types of hotkeys: “multiple keys” and “double click.”

By default, ServSwitch 4site Flex is set to “multiple keys.”

Use the OSD menu to choose the hotkey type and keys.

Multiple keys: Press multiple keys plus command key.

COMMAND = <Hotkey> and <Command Key> together.

The following hotkeys are available for selection: Ctrl, Shift, Alt, and Win.

By Default: HOTKEY = <Ctrl> + <Alt>

Further examples:

<Hotkey> = <Ctrl> + <Win> + <Alt>

<Hotkey> = <Ctrl> + <Shift>

<Hotkey> = <Alt>

Double click key: Double click one key (=hotkey) and immediately press the command key within two seconds.

COMMAND = <Hotkey> and <Command key> in sequence

As a double-click hotkey you can choose one of the following keys:

<Ctrl> + <Shift> + <Alt> + <Scroll>

Examples:

<Hotkey> = <Scroll> <Scroll>

<Hotkey> = <Ctrl> <Ctrl>

NOTE: In command mode (hotkey is activated), LED flashes on the keyboard. In double-click hotkey mode, pressing an invalid key leaves the command mode. While OSD is open hotkey = <Ctrl>.

Selecting display mode:

<Hotkey> + <Q> = Quad mode

<Hotkey> + <F> = Full-Screen mode

<Hotkey> + <P> = PiP mode

<Hotkey> + <W> = Win mode

Selecting active channel in Full-Screen/Quad/PiP/Win mode:

<Hotkey> + <1> = Computer 1

<Hotkey> + <2> = Computer 2

<Hotkey> + <3> = Computer 3

<Hotkey> + <4> = Computer 4

You can also use hotkey and the arrow keys to switch the active channel. In Quad and Win mode, you can select the channel on the right using the 1, 2, 3, or 4 keys on the numeric keypad. Switch the active channel with hotkey and the arrow keys. In PiP mode, the active channel automatically is displayed as full image.

Open USB device switch menu:

<Hotkey> + <F1> = Open USB device/Port 1 switch menu.

<Hotkey> + <F2> = Open USB device/Port 2 switch menu

<Hotkey> + <F3> = Open USB device/Port 3 switch menu

<Hotkey> + <F4> = Open USB device/Port 4 switch menu

Other commands:

<Hotkey> + <O> = Open OSD

<Hotkey> + <U> = Directly open USB Device 1–4

<Hotkey> + <V> = Safe output mode

<Hotkey> + <I> = Directly open OSD PiP menu (in the background display mode switches to PiP as long as the menu is open)

<Hotkey> + <M> = Open/Close the Hotmouse

<Hotkey> + <±> = Adjust volume menu

Hotkeys for Win mode:

<Hotkey> + <S> = Save current Win mode to eeprom.

<Hotkey> + <R> = Restore current Win mode from eeprom and lose all changes.

<Hotkey> + <T> = Toggle transparent status of current Win mode.

<Hotkey> + <Z> = Undo up to ten previous actions.

<Hotkey> + <Y> = Redo up to ten previous actions.

<Hotkey> + <W> + <1,2,3,4> Select Win mode.

Appendix B. Device Configuration Program

Installation of Device Configuration Program (CONFDEV)

The Device Configuration Program enables you to remotely operate the OSD of ServSwitch 4site Flex on an external Windows computer via serial connection.

To install the device configuration software CONFDEV, you need:

- A Windows computer with a free USB or RS 232 COM-port
- Your ServSwitch 4site Flex
- The installation CD containing the confdevEn.exe program
- The enclosed "serial cable" (RJ-45-DB9 adapter + RJ-45 CAT5 cable)

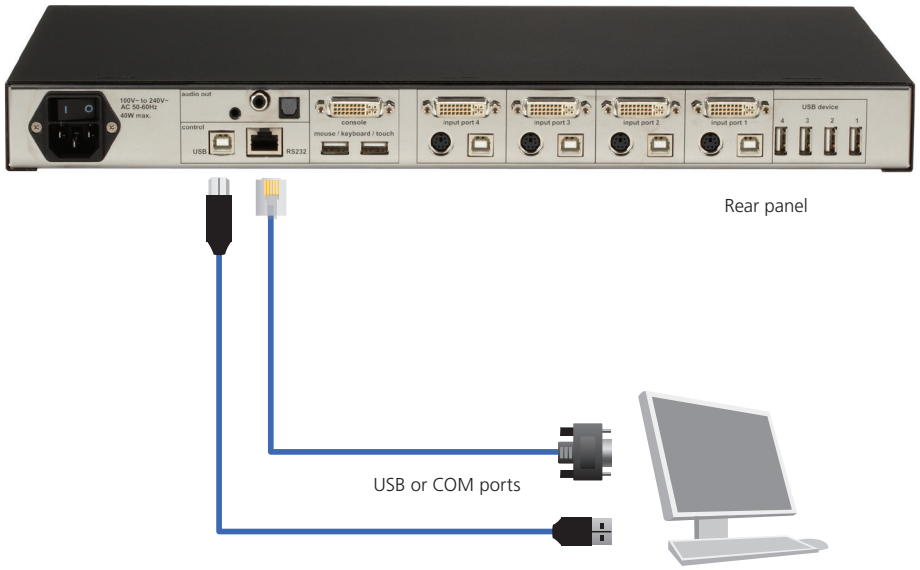


Figure B-1. Hardware configuration for installing the CONFDEV.

Use the serial cable to connect the COM port of the Windows computer with the serial port of your ServSwitch 4site Flex.

Insert the installation CD into the CD-ROM drive and start the confdevEn.exe program.

The Device Configuration Program (CONFDEV) window opens:

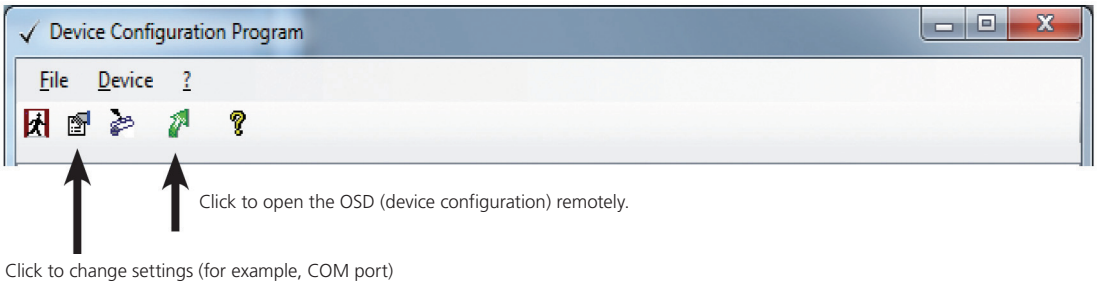


Figure B-2. CONFDEV window.

Settings

Click the "device configuration" button  to open the SETTINGS window. It enables you to set the font size for the OSD window, log parameters, and the COM port ServSwitch 4site Flex is connected to.

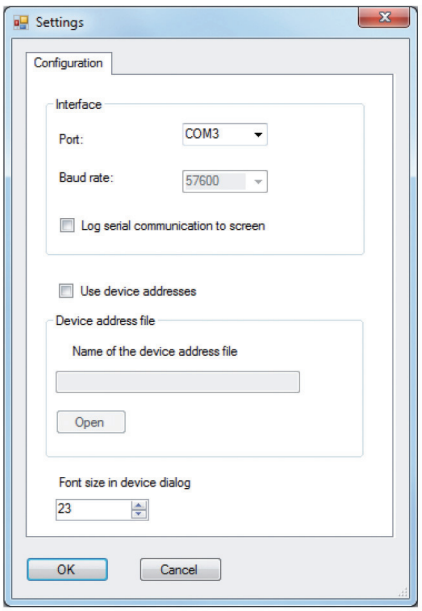


Figure B-3. Settings screen.

Remote OSD operation

Click the green arrow  to open the On Screen Display (OSD) of ServSwitch 4site Flex remotely on your external Windows computer.

The main OSD menu is open and ready for navigation.

Navigation

Use the arrow keys on the keyboard of your remote Windows computer to navigate to the desired line in the OSD menu and confirm by pressing ENTER.

Use the ESC key to return to the previous menu.

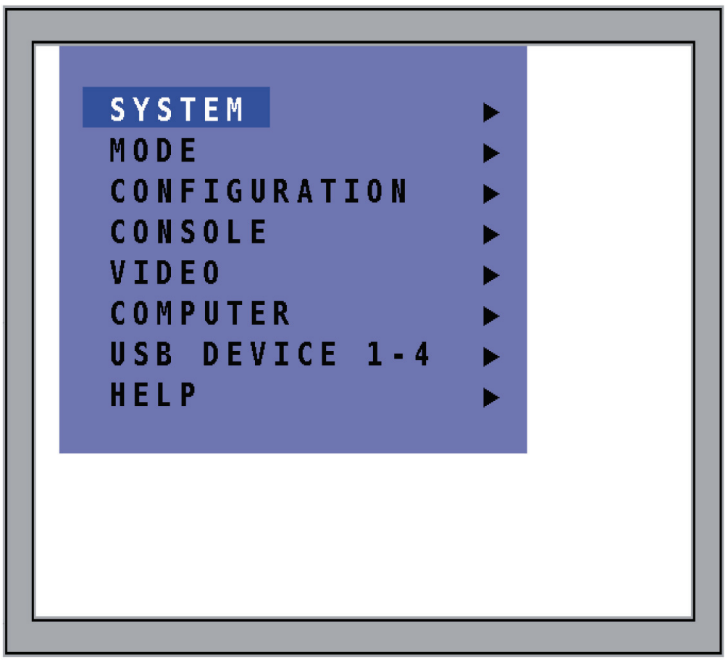


Figure B-4. Navigation screen.

Uploading a background image

A background image can be uploaded to the ServSwitch 4site Flex and will be displayed behind windows when in Win Mode. To upload an image to the ServSwitch 4site Flex, use the ConfDev menu DEVICE >LOAD BACKGROUND IMAGE.

IMPORTANT: Only 256 color bitmaps are supported for background images. The file used should have a maximum size of 2 MB. The maximum resolution will be that of the connected monitor.

If an image of another format needs to be used, it must first be converted into a bitmap. There are free tools available like Gimp or Paint.NET to do this conversion. MS paint available in Windows also supports this conversion. Because of the limited color count in the bitmap format, the quality of the image may be reduced.

For downloading, a compression algorithm is used. If the image cannot be compressed well, the download can take up to 30 minutes.

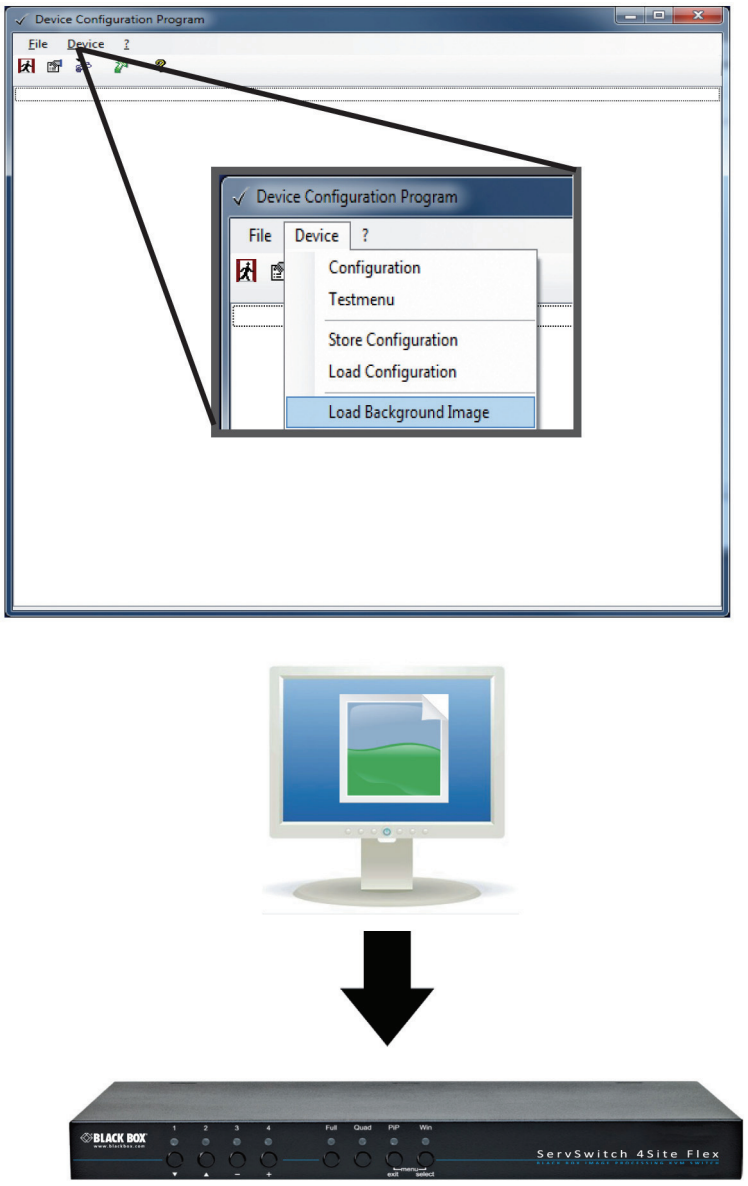


Figure B-5. Uploading a background image to the ServSwitch 4Site Flex.

A 256-color bitmap is uploaded from the user PC to ServSwitch 4Site Flex using the ConfDev utility.

Storing a configuration

ConfDev can also be used to store device configurations to a file on your PC. Open the ConfDev menu DEVICE > STORE CONFIGURATION. The Save As dialog will appear and you can save the configuration to the desired location.

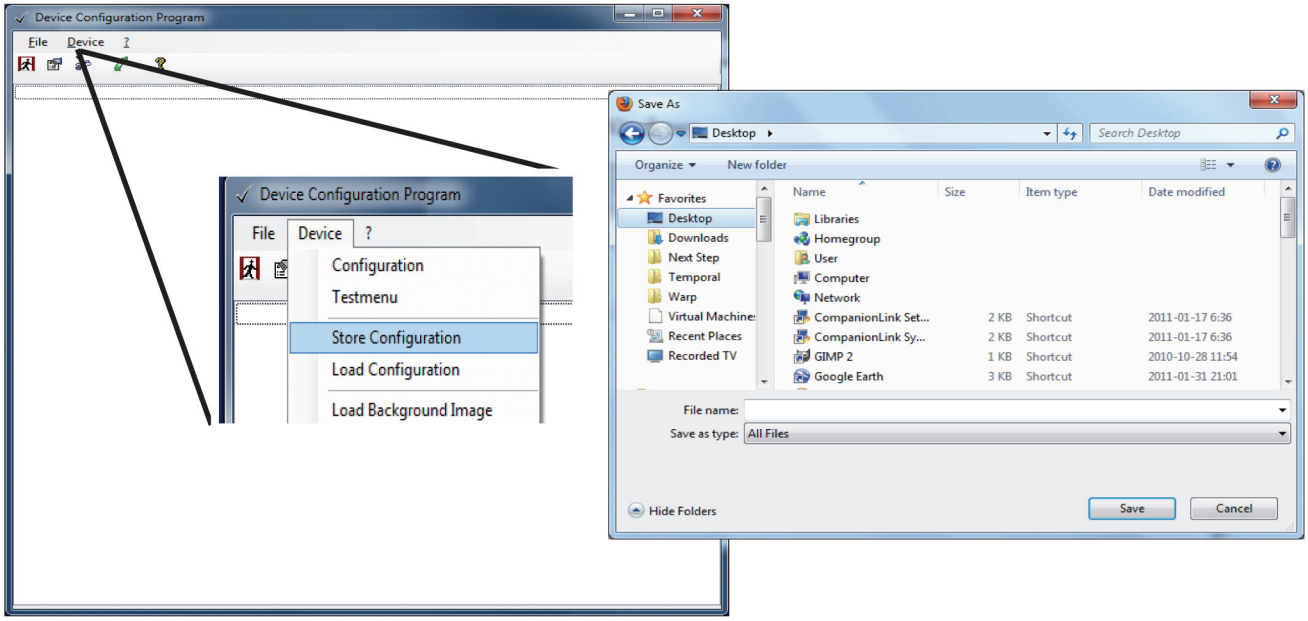


Figure B-6. Storing a configuration.

Loading a configuration

ConfDev can be used to load device configurations from a file on your PC. Open the ConfDev menu DEVICE > LOAD CONFIGURATION. The Open dialog will appear from which you can select the configuration file to be loaded.

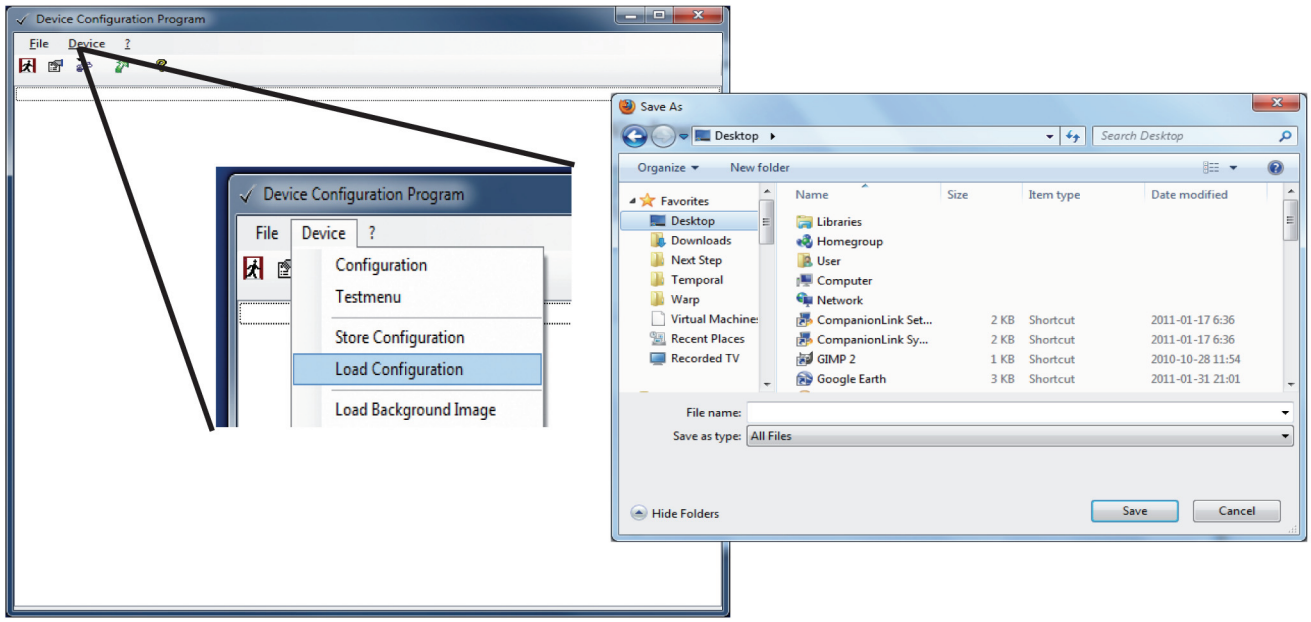


Figure B-7. Loading a configuration.

Appendix C: Update ServSwitch 4site Flex Firmware

To execute a firmware update, you need:

- a computer with serial or USB port
- the enclosed "serial cable" (RJ-45-DB9 adapter + RJ-45 CAT5 cable) or a USB cable (USB-A/USB-B)
- the current executable firmware file

Follow these steps:

1a. Use the serial cable to connect the COM port of your computer to the RS-232 port on ServSwitch 4site Flex.

OR

1b. Use the USB cable to connect the USB port of your computer to the USB port on ServSwitch 4site Flex.

NOTE: The virtual COM port USB driver can be downloaded from the Future Technology Devices International Ltd. Web site at www.ftdichip.com/Drivers/VCP.htm

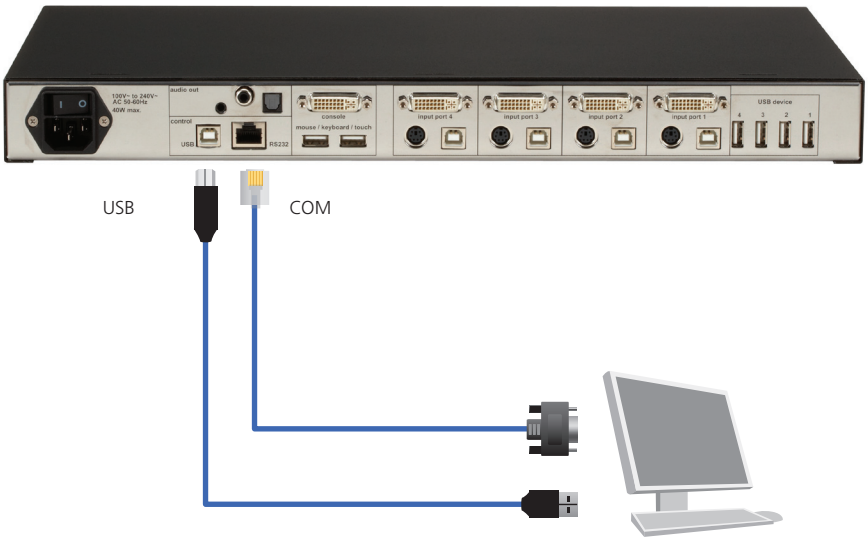


Figure C-1. Rear panel.

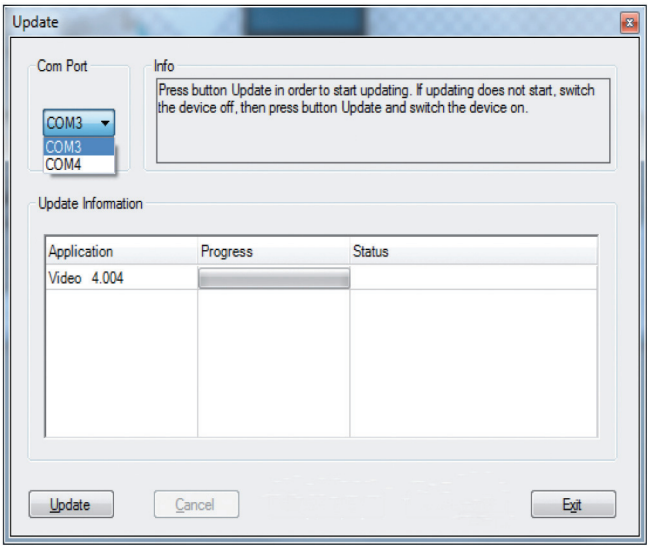


Figure C-2. Update firmware screen.

2. Start the executable firmware file.

3. Set the desired COM port.

4. Press "Update."

LEDs 1–4 on the front panel of the ServSwitch 4site Flex flash (blue) during the update.

Additionally, the upgrade process is indicated by an OSD window on your remote computer.

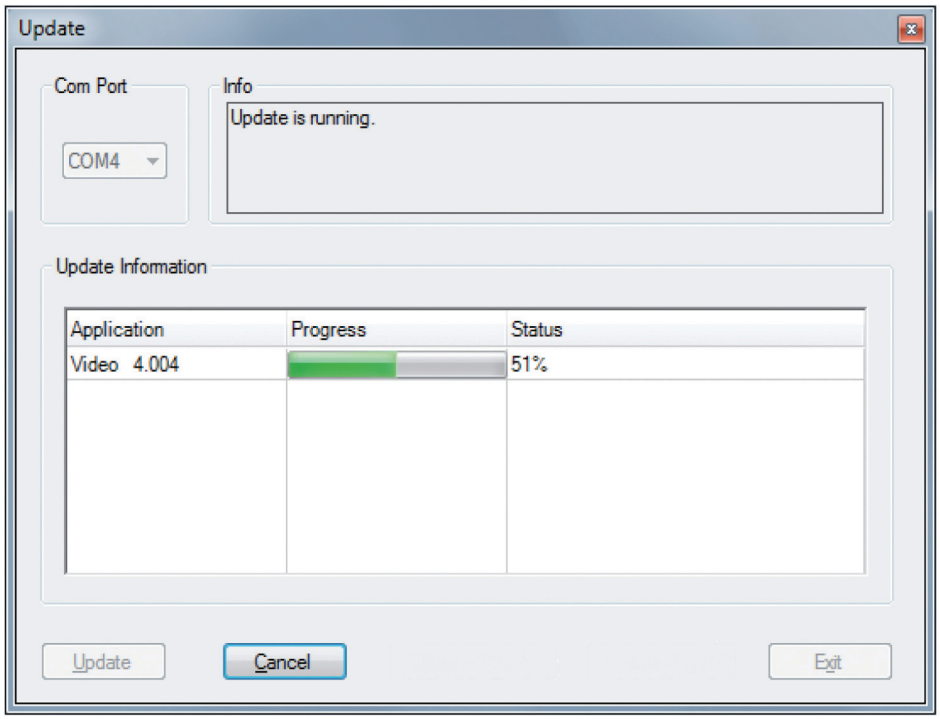


Figure C-3. OSD update screen.

After successful update, ServSwitch 4site Flex restarts without changing configuration.

Appendix D. Serial Cable

For serial remote control, ServSwitch 4site Flex requires a special adapter to connect a CAT5 cable to the serial RJ-45 port at the rear panel of ServSwitch 4site Flex.

This adapter connects to your external serial control device (for example, computer). You can connect any CAT5 cable to the adapter. The other end of the CAT5 cable connects to the RJ-45 port of ServSwitch 4site Flex.

The adapter (plus a standard CAT5 cable) is included with ServSwitch 4site Flex.

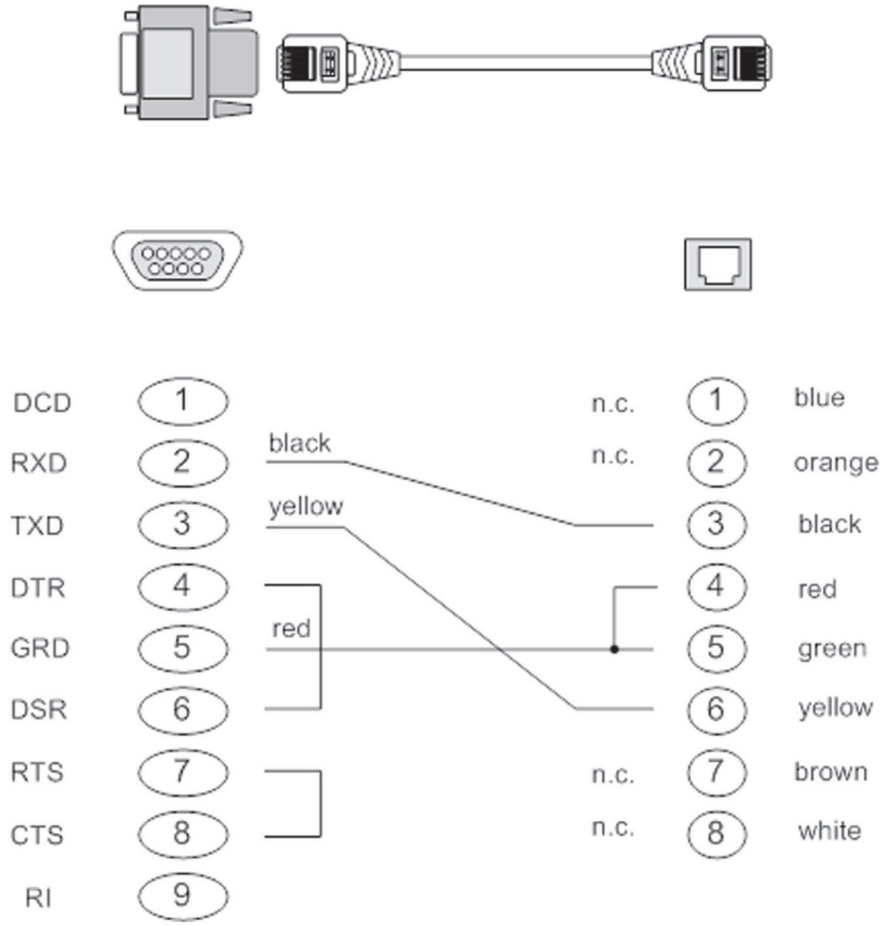


Figure D-1. Serial cable = adapter + standard CAT5 cable.

Appendix E. DCP-XML Remote Control

DCP-XML permits remote control of ServSwitch 4site Flex by a computer or other devices using the RS-232 serial port of ServSwitch 4site Flex. To connect to this port, use the "serial cable" (RJ-45-DB9 adapter + standard RJ45 CAT5 cable).

Device Control Protocol (DCP) is an XML-based protocol. Using DCP, you can query and change all important settings of the ServSwitch 4site Flex.

For a general description of XML, go to at http://www.w3.org/XML

The XML scheme for DCP can be found on the enclosed CD, under the name "dcp.xsd."

For a detailed description on how to use DCP-XML with ServSwitch 4site Flex, please see the "DCP-XML Manual" on CD supplied with ServSwitch 4site Flex.

DCP modes

DCP has two modes of operation:

1. Control: This mode is intended for direct control of a ServSwitch 4site Flex, for example using a computer.
2. Synchronize: This mode is used to synchronize multiple linked devices. In Synchronize mode, ServSwitch 4site Flex sends all settings changes as DCP messages so you can control a chain of linked ServSwitch 4site Flex synchronously.

Appendix F. Supported Touchscreen Controller

ServSwitch 4site Flex supports USB touchscreens with one of the following built-in controllers:

Tyco ELO Touch System:

- AccuTouch® Five-Wire Resistive Touch Technology (includes models 1215L, 1229L, 1515L, 1522L, 1528L Medical, 1529L, 1537L, 1715L, 1729L, 1739L, 1915L, 1928L, 1928L Medical, 1939L, 2020L)
- IntelliTouch® Surface Wave Touch Technology elo 2701 Controller Series (IntelliTouch, SecureTouch)
- CarrollTouch Infrared Touch Technology

(not supported: Acoustic Pulse Recognition (APR))

TSharc:

- TSharc Octopus Controller: This is widely used, including in touchscreens manufactured by 3M, MicroTouch, TrollTouch, The Bergquist Company.

XanQ:

- USB-R5W-HT580-R by XanQ Technology Corporation

3M® MicroTouch®:

- MicroTouch EX II (new release delivered since 2009 with support of HID)
- MicroTouch DST, only restriction: (first calibrate it at computer, then same procedure but while connected at the ServSwitch 4site Flex; only left mouse key support, right mouse key has no function). For example, integrated at display NEC Multeos 32" and 40" LCD with touch option.

ET&T Technology:

- ETouch IR™ infrared touchscreen, aluminium frame, 26" up to 65"

eGalaxy eMPIA® Technology Inc. (EETI):

- S5000UEGG; 4/5-Wire Resistive Touch Technology; USB;

NOTE: If your USB touchscreen does not feature one of the controllers listed above or does not work with a digitizer touchscreen interface, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com to determine compatibility.

NOTE: New multitouch screen systems are compatible with the newly defined digitizer touchscreen interface. Generally, these can be used.

Appendix G. Supported Video Input

Table G-1. Video input (display video formats).

Mode	Resolution	Sync. Polarity (H/V)	Refresh Rate (Hz)		Set in EDID	VESA/CSA Standard
			Analog	Digital*		
CGA	640 x 350	+/-	85	85	—	DMT
CGA	640 x 400	-/+	85	85	—	DMT
EGA	720 x 400	+/+	70	70	X	CVT
EGA	720 x 400	-/+	85	85	—	DMT
VGA	640 x 480	-/-	60	22–60	X	DMT
VGA	640 x 480	-/-	72	72	X	DMT
VGA	640 x 480	-/-	75	75	X	DMT
VGA	640 x 480	-/-	85	85	X	DMT
SVGA	800 x 600	+/+	56	22–56	X	DMT
SVGA	800 x 600	+/+	60	60	X	DMT
SVGA	800 x 600	+/+	72	72	X	DMT
SVGA	800 x 600	+/+	75	75	X	DMT
SVGA	800 x 600	+/+	85	85–180	X	DMT
XGA	1024 x 768	-/+	50	22–50	—	CVT
XGA	1024 x 768	-/-	60	60	X	DMT
XGA	1024 x 768	+/+	70	70	X	DMT
XGA	1024 x 768	+/+	75	75	X	DMT
XGA	1024 x 768	+/+	85	85	X	DMT
XGA/B	1152 x 864	+/+	75	75	X	DMT
SUN	1152 x 900	+/+	66	66	—	CVT
HDTVp	1280 x 720	+/+	50	22–50	—	CEA-861-E
HDTVp	1280 x 720	-/+	60	60	—	CEA-861-E
WXGA	1280 x 768	-/+	60	60	—	DMT
UWXGA	1280 x 960	+/+	60	60	—	DMT
UWXGA	1280 x 960	+/+	85	85	—	DMT
SXGA	1280 x 1024	9	50	50	—	CVT
SXGA	1280 x 1024	+/+	60	60	x	DMT
SXGA	1280 x 1024	9	72	72	—	CVT
SXGA	1280 x 1024	+/+	75	75	X	DMT

*NOTE: *Digital: All video formats up to 162 MHz pixel clock following DMT, CVT, or GTF standard timings are supported. Within this range, ANY digital resolution is supported. Analog input may not be detected correctly.*

Table G-1 (Continued). Video input (display video formats).

Mode	Resolution	Sync. Polarity (H/V)	Refresh Rate (Hz)		Set in EDID	VESA/CSA Standard
			Analog	Digital*		
SXGA	1280 x 1024	+/+	85	85	X	DMT
WXGA	1360 x 768	+/+	60	22–60	—	DMT
SXGA+	1400 x 1050	-/+	50	22–50	—	CVT
SXGA+	1400 x 1050	-/+	60	60	—	DMT
SGI	1600 x 1024	+/+	60	60	—	CVT
UXGA	1600 x 1200	+/+	50	50	—	CVT
UXGA	1600 x 1200	+/+	60	60	X	DMT
UXGAr	1600 x 1200	+/+	50	50	—	CVT
UXGAr	1600 x 1200	+/+	60	60	—	CVT
WSXGA	1680 x 1050	-/+	60	60	—	DMT
HDTVp	1920 x 1080	+/+	—	22–24	—	CEA-861-E
HDTVp	1920 x 1080	+/+	50	50	—	CEA-861-E
HDTVp	1920 x 1080	+/+	60	60	X	CEA-861-E
WUXGAr	1920 x 1200	+/+	50	22–50	—	CVT
WUXGAr	1920 x 1200	+/+	60	60	X	DMT

NOTE: When set to auto (by default), the ServSwitch 4site Flex reads the EDID of the connected monitor and automatically supports its resolution.

Appendix H. Supported Video Output

Table H-1. Video output (display video formats).

Mode	Horizontal	Vertical	Hz
VGA	640	480	69
VGA	640	480	75
VGA	640	480	85
SVGA	800	600	60
SVGA	800	600	75
SVGA	800	600	85
XGA	1024	768	50
XGA	1024	768	60
XGA	1024	768	70
XGA	1024	768	75
XGA	1024	768	85
SXGA	1280	1024	50
SXGA	1280	1024	60
SXGA	1280	1024	75
SXGA+	1400	1050	50
SXGA+	1400	1050	60
UXGA	1600	1200	50
UXGA	1600	1200	60
UXGAr	1600	1200	50
UXGAr	1600	1200	60
XGA/B	1152	864	75
UWXGA	1280	960	60
UWXGA	1280	960	85
SUN	1152	900	66
WXGA	1280	768	60
WXGA	1366	768	60
WSXGA	1680	1050	60
WUXGAr	1920	1200	40
WUXGAr	1920	1200	50

Table H-1 (Continued). Video output (display video formats).

Mode	Horizontal	Vertical	Hz
WUXGAr	1920	1200	60
HDTVp	1280	720	50
HDTVp	1920	1080	24
HDTVp	1920	1080	50
HDTVp	1920	1080	60

NOTE: When set to auto (by default), ServSwitch 4site Flex reads the EDID of the monitor connected and automatically supports its resolution.

Appendix I. Cascading

Cascading multiple ServSwitch 4site Flex units—more than 4 video sources on a single display:

ServSwitch 4site Flex can be cascaded to display more than 4 video sources simultaneously on a single display.

In this master-slave-system, any ServSwitch 4site Flex can be used as master or slave. It is the same hardware. One ServSwitch 4site Flex is used as master unit. The console that has a keyboard, mouse, and display or touchscreen is connected to the output of the master unit. A slave ServSwitch 4site Flex can be connected to each input of the master unit. In this way, each quadrant on the display can be split in four more quadrants.

Example: In a setup with one master and four slave ServSwitch 4site Flex switches a total of 16 video sources can be displayed simultaneously on a single console.

All display modes:

Display modes (Full-Screen, Quad, PiP, Win) of slaves and master can individually be set, combined, and switched, for example, the master unit could be set to Quad mode, while the first slave is set to PiP, the second slave to Full-Screen, the third slave to Quad, and the fourth slave to Win mode. Any combination is possible.

Keyboard and mouse operation:

You can activate the keyboard and mouse on any of the up to 16 computers connected.

Hotkeys for switching:

Use hotkeys to quickly activate any of the (for example) 16 channels or to switch the display mode of any of the ServSwitch 4site Flex units in the master-slave-system.

Different levels (master or slave) require different types of hotkeys.

For example, keep the hotkey default setting <Hotkey1> = <Ctrl> + <Alt> for all slave ServSwitch 4site Flex units.

Just change the hotkey setting for the master ServSwitch 4site Flex to (for example) <Hotkey2> = <Ctrl> + <Win>

Example: In a cascaded ServSwitch 4site Flex setup with one master, 4 slaves, and 16 computers connected, you can activate keyboard and mouse of computer 16 by pressing the following hotkey combination:

<Hotkey2> + 4 (to activate Channel 4 on the master level), then <Hotkey1> + 4 (to activate Channel 4 on the slave ServSwitch 4site Flex connected to Port 4 of the master)

Example: To change a display mode of (for example) the slave ServSwitch 4site Flex connected to Port 4 of the master ServSwitch 4site Flex, press the following hotkey combination:

<Hotkey2> + 4 (to activate Channel 4 on the master level), then <Hotkey1> + P to switch from default Quad mode to PiP mode in this quadrant. The result is a screen split in four equal quadrants. All quadrants are split again in four equal quadrants (Quad mode), just the quadrant in the lower right corner (Channel 4) is showing its four sources in PiP mode.

NOTE: Use a programmable keyboard for comfortable switching of cascaded ServSwitch 4site Flex. Behind a single key, you can program a combination of hotkeys. By pressing a single key you can activate keyboard and mouse of one of (for example) 16 computers connected or the switch display mode of the master or any of the four slave ServSwitch 4site Flex.

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